



Taxonomy & Inventories

Jumping plant lice (Hemiptera, Psylloidea) of Bulgaria - an annotated checklist

Monika Pramatarova^{‡,§}, Igor Malenovský^{¶,¶}, Ilia Gjonov[‡]

[‡] Sofia University, Faculty of Biology, Sofia, Bulgaria

[§] National Museum of Natural History - Bulgarian Academy of Sciences, Sofia, Bulgaria

| Department of Botany and Zoology, Faculty of Science, Masaryk University, Brno, Czech Republic

[¶] Department of Entomology, Moravian Museum, Brno, Czech Republic

Corresponding author: Ilia Gjonov (gjonov@cicadina.com)

Academic editor: Fedor Konstantinov

Received: 20 Jan 2025 | Accepted: 08 Mar 2025 | Published: 24 Mar 2025

Citation: Pramatarova M, Malenovský I, Gjonov I (2025) Jumping plant lice (Hemiptera, Psylloidea) of Bulgaria – an annotated checklist. Biodiversity Data Journal 13: e147277. <https://doi.org/10.3897/BDJ.13.e147277>

Abstract

Background

Knowledge of the fauna of jumping plant lice or psyllids in Bulgaria is rather scattered. So far, 113 species of psyllids have been recorded from Bulgaria in 51 publications. The aim of this study is to provide an up-to-date checklist of the Psylloidea species from Bulgaria, based on extensive fieldwork by the authors and examination of specimens mainly from the Zoological Collection of Sofia University (BFUS) and the Moravian Museum in Brno (MMBC). In addition, a thorough review of all relevant literature was undertaken to consolidate the existing records.

New information

Twenty-five species of jumping plant lice are recorded here from Bulgaria for the first time. Of these, two species represent new records for Europe: *Dyspersa kantshavelii* (Gegechkori, 1977) and *Heterotrioza kochiae* (Gegechkori, 1975); and three additional species represent new records for the Balkan Peninsula: *Arytainilla spartiicola* (Šulc, 1912), *Craspedolepta araneosa* Loginova, 1962 and *Eryngiofaga babugani* (Loginova,

1964). A new synonymy is proposed: *Colposcения osmanica* Vondráček, 1953 = *Colposcения kiritshenkoi* Loginova, 1960, syn. nov. A lectotype is designated for *C. osmanica* to stabilise the nomenclature. Original drawings or photographs of diagnostic characters on male and female terminalia are provided for *C. osmanica*, *D. kantshavelii*, *Heterotrioza eurotiae* (Loginova, 1960) and *H. kochiae*. Distributional maps summarising all known records from Bulgaria are provided for each species. Where available, photographs of live or mounted specimens and information on host plants are also provided, including new host plant records for 10 species. The previously published records of *Aphalara sauteri* Burckhardt, 1983, *Bactericera acutipennis* (Zetterstedt, 1828), *B. reuteri* (Šulc, 1913), *Dyspersa apicalis* (Foerster, 1848), *D. viridula* (Zetterstedt, 1828), *Eryngiofaga mesomela* (Flor, 1861) and *Trioza dispar* Löw, 1878 from Bulgaria are considered doubtful and these species are deleted from the list of the Bulgarian fauna, which now comprises 130 species from 33 genera and six families of jumping plant lice. This diversity is compared with the known data on Psylloidea in other countries of the Balkan Peninsula and Turkey and the Bulgarian psyllid fauna is discussed from the perspective of biogeography.

Keywords

Balkan Peninsula, biodiversity, Europe, faunistics, new records, new synonymy, new host plant records, phytophagous insects, psyllids, Sternorrhyncha, taxonomy, West Palearctic

Introduction

Jumping plant lice or psyllids (Hemiptera, Psylloidea) are small plant sap-feeding insects. They are usually narrowly host-specific and some species are of increasing economic importance as vectors of bacterial plant pathogens such as *Candidatus Phytoplasma* and *Liberibacter* spp. (Burckhardt et al. 2021, Moreno et al. 2021, Mauck et al. 2024). The superfamily Psylloidea comprises about 4,000 species worldwide, of which about 400 species occur in Europe (Ouvrard 2020). Although it is generally acknowledged that the Palearctic fauna of the Psylloidea is comparatively well known, knowledge of the psyllids of the Balkans is still incomplete. For some countries, for example, Albania, Bosnia and Herzegovina, Kosovo, Montenegro and North Macedonia, information is scarce, scattered or even missing (Ouvrard 2020).

Bulgaria is a medium-sized country (app. 110,000 km²) located in the south-eastern part of the European continent and in the central and eastern part of the Balkan Peninsula. The country borders Romania to the north, Serbia and North Macedonia to the west, Greece and Turkey to the south and the Black Sea to the east. A significant part of the Bulgarian territory belongs to the Alpine-Himalayan Belt, which is characterised by the typical alternation of chain-like mountain ranges with old, highly fractured mountain massifs. The diverse relief is complemented by the flat Danubian Plain, which is connected to the vast Eastern European Plain. In terms of hydroclimate, the country

occupies a transitional position between the southern parts of the temperate and subtropical climate, with the southern regions being influenced by the Mediterranean. Together with the physical-geographical position of Bulgaria, the combination of diverse relief, climate and water regime determines the high biological diversity of the country (Hubenov 1997, Koprlev et al. 2002).

The first data on the Bulgarian psyllids were published by Dimitar Joakimov as part of a pioneering list of the Hemiptera fauna of Bulgaria (Joakimov 1909), which included records of 17 species of psyllids. Although some of the psyllids collected by Joakimov have recently been found in the collections of the National Museum of Natural History in Sofia, the voucher specimens for the records published in Joakimov (1909) have probably been lost and cannot be revised (Pramatarova et al. 2023).

Thereafter, the psyllids were neglected by Bulgarian entomologists for a long time, until in the 1960s when Konov (1961), Tsalev (1961), Harizanov (1963), Harizanov (1964), Harizanov (1966a), Harizanov (1966b), Harizanov (1966c), Harizanov (1966d), Harizanov (1966e), Harizanov (1970) dealt with the biology and ecology of several economically important species: *Cacopsylla pyri* (Linnaeus, 1758), *C. pyrisuga* (Foerster, 1848), *C. picta* (Foerster, 1848), *C. pruni* (Scopoli, 1763), *Homotoma ficus* (Linnaeus, 1758) and *Bactericera nigricornis* (Foerster, 1848).

At the same time, the Polish expert on Psylloidea, Sędzimir Maciej Klimaszewski, reported in a series of faunistic and taxonomic papers (Klimaszewski 1961a, Klimaszewski 1961b, Klimaszewski 1963, Klimaszewski 1964, Klimaszewski 1965, Klimaszewski 1970), which are summarised in the checklist of psyllids of the Palaearctic Region (Klimaszewski 1973), a total of 41 species from Bulgaria, including formal descriptions of four new species, two of which are still valid – *Craspedolepta bulgarica* Klimaszewski, 1961 and *Colposcena traciana* (Klimaszewski, 1970). *Craspedolepta salicorniae* Klimaszewski, 1961 was synonymised with *Rhodochlanis bicolor* (Scott, 1880) and *Homotoma viridis* Klimaszewski, 1961 was synonymised with *H. ficus* (Linnaeus, 1758) by Burckhardt (1989).

Another important contribution was made by the Czech hemipterologist, Pavel Lauterer. Mainly on the basis of material he had collected during several field trips to Bulgaria in the 1970–1980s and, in collaboration with other colleagues, he presented 14 species from Bulgaria, including *Agonoscena pistaciae* Burckhardt & Lauterer, 1989 and *Megagonoscena gallicola* Burckhardt & Lauterer, 1989, which were described as new to science (Harizanov and Lauterer 1968, Lauterer 1979, Lauterer 1982, Burckhardt and Lauterer 1989, Lauterer and Janíček 1990, Lauterer 1991, Lauterer 1993, Burckhardt and Lauterer 1997a, Lauterer and Malenovský 2002). In addition, Loginova (1978) described *Diaphorina lycii* Loginova, 1978, partly on the basis of material collected by P. Lauterer in Bulgaria. However, a larger part of P. Lauterer's material from Bulgaria has remained unpublished to this day.

In the 1980s, Elżbieta Głowacka, another Polish entomologist, visited Bulgaria several times and published comprehensive lists of psyllids collected in the Western Rhodopes

and the Pirin Mountains, which represented another major step in the knowledge of the Bulgarian fauna, as 26 species were recorded from the country for the first time (Głowacka and Harizanov 1983, Głowacka 1989).

Further faunistic data on psyllids from Bulgaria were scattered in the publications of Schaefer (1949), Vondráček (1953), Loginova (1974a), Gegechkori and Loginova (1990), Maryańska-Nadachowska et al. (1992), Kuznetsova et al. (1995), Burckhardt and Lauterer (1997b), Hodkinson and Bird (2000), Maryańska-Nadachowska (2002), Labina (2007), Labina et al. (2009), Labina et al. (2014), Véték and Rédei (2009), Etropolska et al. (2011), Etropolska et al. (2015), Wonglersak et al. (2017), Nakabachi et al. (2020), Percy and Cronk (2020), Shapoval et al. (2021) and Nokkala et al. (2022).

Recently, Pramatarova et al. (2021) provided a list of psyllid species collected in the Sarnena Sredna Gora Mountains, Pramatarova et al. (2023) revised the historical material of the Psylloidea in the National Museum of Natural History in Sofia and Pramatarova et al. (2024) published DNA barcodes for 24 species of Aphalaridae from Bulgaria, four of which were recorded for the first time from the country.

Here, we summarise and critically re-evaluate all previously published data on psyllids from Bulgaria. We add many new data, based on a complete revision of the material of psyllids collected by Pavel Lauterer in the 1970–1980s and our own extensive fieldwork in Bulgaria in recent years. The main aim of this work is to provide an up-to-date checklist of the Psylloidea for Bulgaria. We also provide maps summarising the distribution of individual psyllid species in Bulgaria. Where available or relevant, we provide habitus photographs, illustrations of diagnostic characters and information on the nomenclature and host plants of the psyllids.

Materials and methods

A large part of the specimens included in this paper were collected by us during faunistic surveys in different regions of Bulgaria in the years 1997–2023 by sweeping or direct search on host plants. This material is mainly deposited in the Zoological Collection of Sofia University in Sofia, Bulgaria (BFUS) and partly in the Moravian Museum in Brno, Czechia (MMBC). We have also reviewed and identified all specimens collected by Pavel Lauterer and his colleagues and students (R. Janíček, A. Merta and others) in Bulgaria in the 1970–1980s – this material is deposited in the MMBC. A small number of specimens of psyllids from Bulgaria deposited in the National Museum in Prague, Czechia (NMPC), have also been added to the dataset. In total, 10838 specimens of psyllids were directly examined by us. In view of the considerable size of the dataset, detailed information on the material examined is not given in the main text of the paper, but can be found together with previously published records of psyllids from Bulgaria in a GBIF dataset published in parallel (Pramatarova et al. 2025). The material from BFUS has also been included in an internal database prepared on the Specify collection management platform (Specify Collections Consortium 2021).

In order to give a concise overview of the distribution of the species in the main text, we give a list of the geomorphological units where the species have been recorded, based on the classification of Hubenov (1997), which is widely used in literature on the fauna of Bulgaria. For each species, we also provide a distribution map with these units (Fig. 1). In the absence of precise GPS coordinates for a record, estimated coordinates were used for georeferencing. If a locality was only given as a town or village, the centre was taken as the reference point. When additional information was provided (e.g. elevation, slope orientation etc.), these details were included in the process and points that corresponded to this information were selected. Published records that did not contain sufficient information, such as specimen deposition details or those that referred to species whose original identification we considered uncertain in light of current taxonomy, were classified in our distribution maps as 'published, requiring revision', meaning that these data require further verification or revision. The maps were created using QGIS 3.26.3 software (<http://www.qgis.org>).

The psyllid taxa are listed in alphabetical order according to the classification proposed by Burckhardt et al. (2021), the nomenclature following Ouvrard (2020) and Cho et al. (2022). For each species, a reference is given to its morphological diagnosis and illustrations in literature that can be used for identification. Unless otherwise stated, the general distribution is summarised from Ouvrard (2020). The distribution in Bulgaria is listed separately for published records and newly-studied material using the abbreviations of the districts from Hubenov (1997) (see the legend to Fig. 1 for the list of abbreviations). We explicitly list host plants only if they are associated with data from Bulgaria (for more details on host plants throughout the species' range, see Ouvrard (2020)). We use the term 'host plant' or 'confirmed host plant' only for plant taxa where a psyllid species is known to complete its life cycle from immature to adult (Burckhardt et al. 2014). In cases where only adults were collected, but no immatures, on a plant taxon that we nevertheless believe to be a potential host plant, we use the term 'probable host plant'. The nomenclature of the host plants is taken from POWO (2024). The morphological terminology in the taxonomic notes follows Ossiannilsson (1992). Photographs of live specimens of psyllids were taken with a Canon 70D DSLR camera with a Canon MP-E 65 mm macro lens and a Yongnuo YN-24EX macro flash or with a Nikon 5200 DSLR camera with a Laowa ultra macro lens and a Laowa Twin Flash KX-800. Most photographs of dry-mounted specimens were taken with a Keyence VHX-5000 digital microscope with VH-Z20T objective. Line drawings were made of slide-mounted specimens under a Leica DM5500B compound microscope with drawing tube. The latter instrument with Leica DFC320 camera and Leica Application Suite software was also used for detailed images of terminalia, temporarily slide-mounted in glycerol.

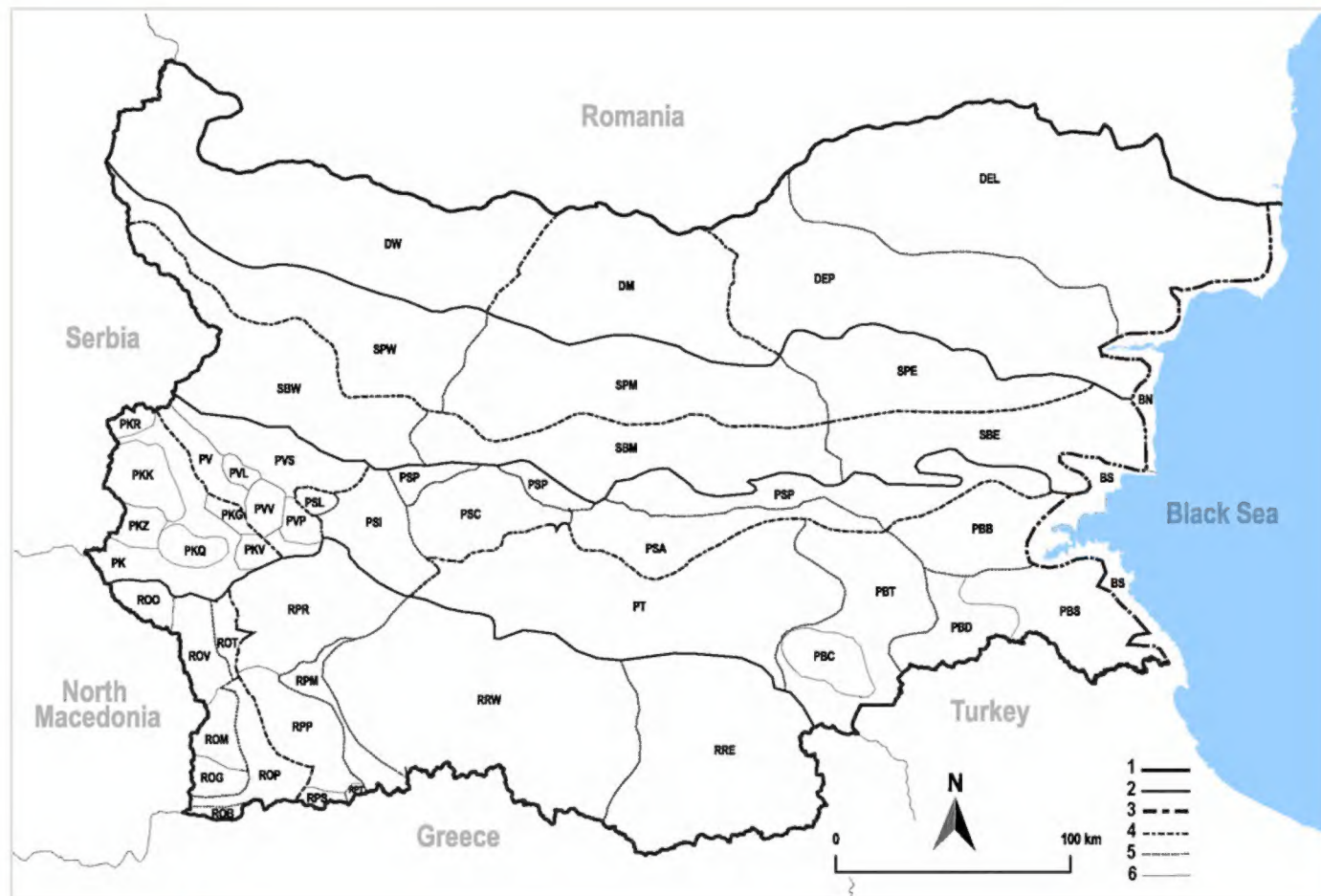


Figure 1. [doi](#)

Map of the geographical regions of Bulgaria (Hubenov 1997). **1** - Bulgarian state border; **2** - border of regions; **3** - Black Sea border; **4** - border of subregions; **5** - border of smaller territorial units; **6** - border of mountains or basins. Abbreviations: **Danubian Plain (D)**: Western Danubian Plain (**DW**), Middle Danubian Plain (**DM**), Eastern Danubian Plain (**DE**) - Ludogorie-Dobrudzha District (**DEL**), Popovo-Provadiya District (**DEP**); **Stara Planina Range system (S)**: Predbalkan (**SP**) - Western Predbalkan (**SPW**), Middle Predbalkan (**SPM**), Eastern Predbalkan (**SPE**), Balkan (**SB**) - Western Balkan (**SBW**), Middle Balkan (**SBM**), Eastern Balkan (**SBE**); **Transitional region (P)**: Kraishite-Konyavo District (**PK**) - Rouy Mt. (**PKR**), Golo Burdo Mt. Verila (**PKG**), Verila Mt. (**PKV**), Kraishite (**PKK**), Zemenska Planina Mt. (**PKZ**), Konyavska Planina Mt. (**PKQ**), Vitosha District (**PV**) - Sofia Basin (**PVS**), Lyulin Mt. (**PVL**), Vitosha Mt. (**PVV**), Plana Mt. (**PVP**), Srednogorie-Podbalkan subregion (**PS**) - Podbalkan Basins (**PSP**), Sredna Gora Mts. (**PSS**), Ihtimanska Sredna Gora (**PSI**), Lozenska Planina (**PSL**), Sushtinska Sredna Gora (**PSC**), Surnena Sredna Gora (**PSA**), Thracian Lowland (**PT**), Toundzha-Strandzha subregion (**PB**) - Sakar-Toundzha District (**PBT**), Sakar Mt. (**PBC**), Bakadzhik-Bourgas District (**PBB**), Strandzha-Dervent District (**PBD**), Strandzha Mt. (**PBS**); **Rila-Rhodopi Massif (R)**: Osogovo-Belasitsa group (**RO**) - Osogovska Planina Mt. (**ROO**), Vlahina Planina Mt. (**ROV**), Maleshevska Planina Mt. (**ROM**), Ograzhden Mt. (**ROG**), Belasitsa Mt. (**ROB**), Srednostrumska Valley (**ROS**), Boboshevo-Simitli Valley (**ROT**), Krupnik-Sandanski-Petrich Valley (**ROP**), Rila-Pirin group (**RP**) - Rila Mt. (**RPR**), Pirin Mt. (**RPP**), Slavianka Mt. (**RPS**), Sturgach Mt. (**RPT**), Mesta Valley (**RPM**), Rhodopi Mts (**RR**) - Western Rhodopi Mts (**RPW**), Eastern Rhodopi Mts (**RPE**); **Black Sea coast (B)**: Northern Black Sea coast (**BN**), Southern Black Sea coast (**BS**).

Annotated checklist of Psylloidea in Bulgaria

Family Aphalaridae Löw, 1879

Subfamily Aphalarinae Löw, 1879

Genus *Aphalara* Foerster, 1848

Aphalara affinis (Zetterstedt, 1828)

Diagnosis: Adult (Fig. 2a). Loginova (1961), Ossiannilsson (1992). **Fifth instar immature.** Ossiannilsson (1992).

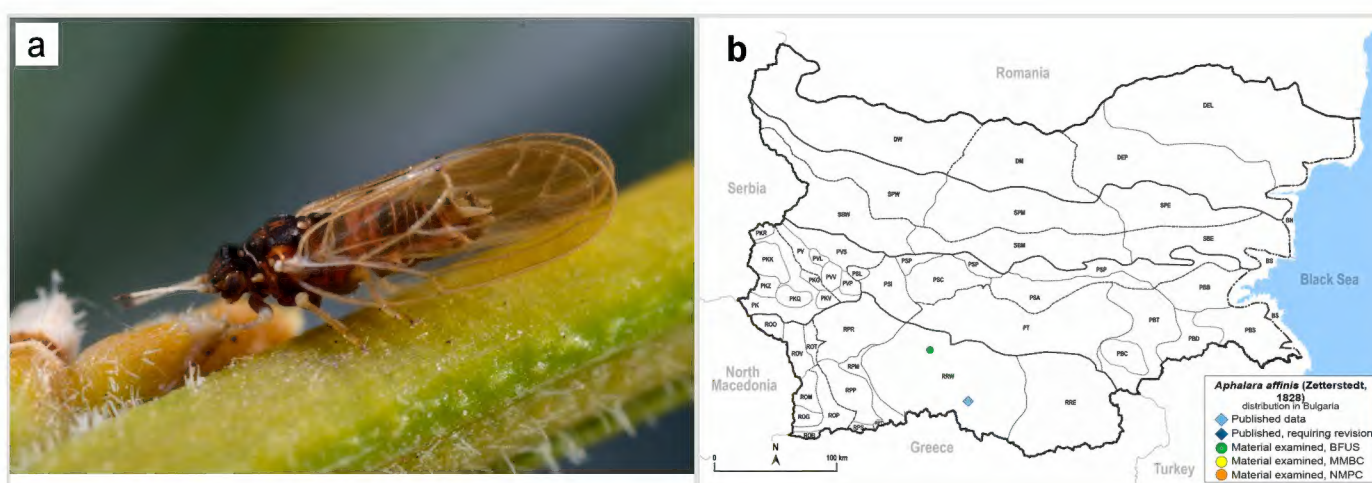


Figure 2.

Aphalara affinis (Zetterstedt, 1828).

a: *Aphalara affinis*, adult male; [doi](#)

b: Distribution of *Aphalara affinis* in Bulgaria. [doi](#)

Distribution: General distribution. Northern, Central and Eastern Europe, Russia (European part, Siberia and Far East). **Distribution in Bulgaria** (Fig. 2b). Published records: RRW (Pramatarova et al. 2024). Material examined: RRW.

Aphalara avicularis Ossiannilsson in Ossiannilsson & Jansson, 1981

Diagnosis: Adult (Fig. 3a) and **fifth-instar immature.** Ossiannilsson (1992).

Aphalara exilis (Weber & Mohr, 1804)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992), Burckhardt and Lauterer (1997a).

Distribution: General distribution. Western Palaearctic (Burckhardt and Lauterer 1997a). **Distribution in Bulgaria** (Fig. 5). Published records: PVS, RRW (Joakimov 1909, Klimaszewski 1965, Głowacka and Harizanov 1983). Material examined: PVL, RPM.

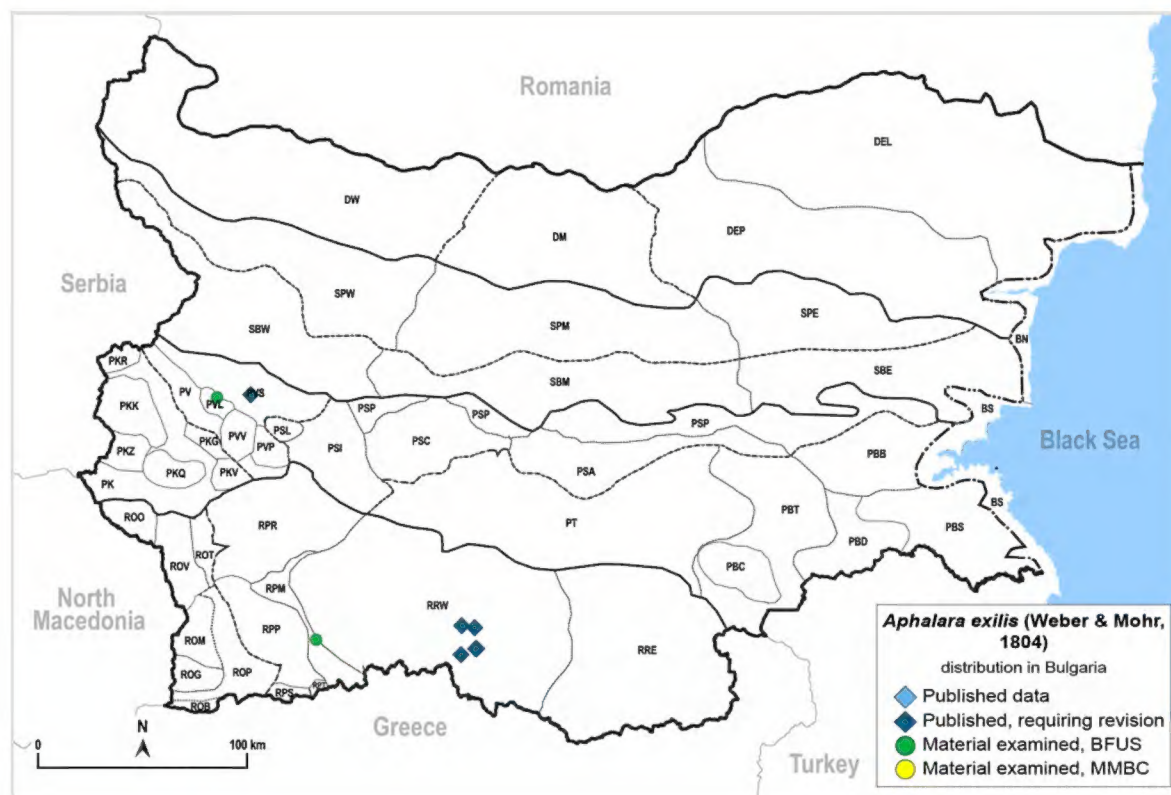


Figure 5. [doi](#)

Distribution of *Aphalara exilis* (Weber & Mohr, 1804) in Bulgaria.

Notes: The species is quite rare in Bulgaria and only a few specimens have been collected recently. It is very likely that the previously published records from Bulgaria refer in fact to *A. nigrimaculosa* (Pramatarova et al. 2023).

Aphalara freji Burckhardt & Lauterer, 1997

Diagnosis: Adult. Burckhardt and Lauterer (1997a); Ossiannilsson (1992) as *A. polygoni*. **Fifth-instar immature.** Ossiannilsson (1992), as *A. polygoni*.

Distribution: General distribution. Western Palaearctic, Iran, South Korea. **Distribution in Bulgaria** (Fig. 6). Published records: ROP, RRW (Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989; as *A. polygoni*); PSA, SBE (Pramatarova et al. 2021, Pramatarova et al. 2024). Material examined: PSA, ROM, ROP, RPM, RPP, RPR, SBE.

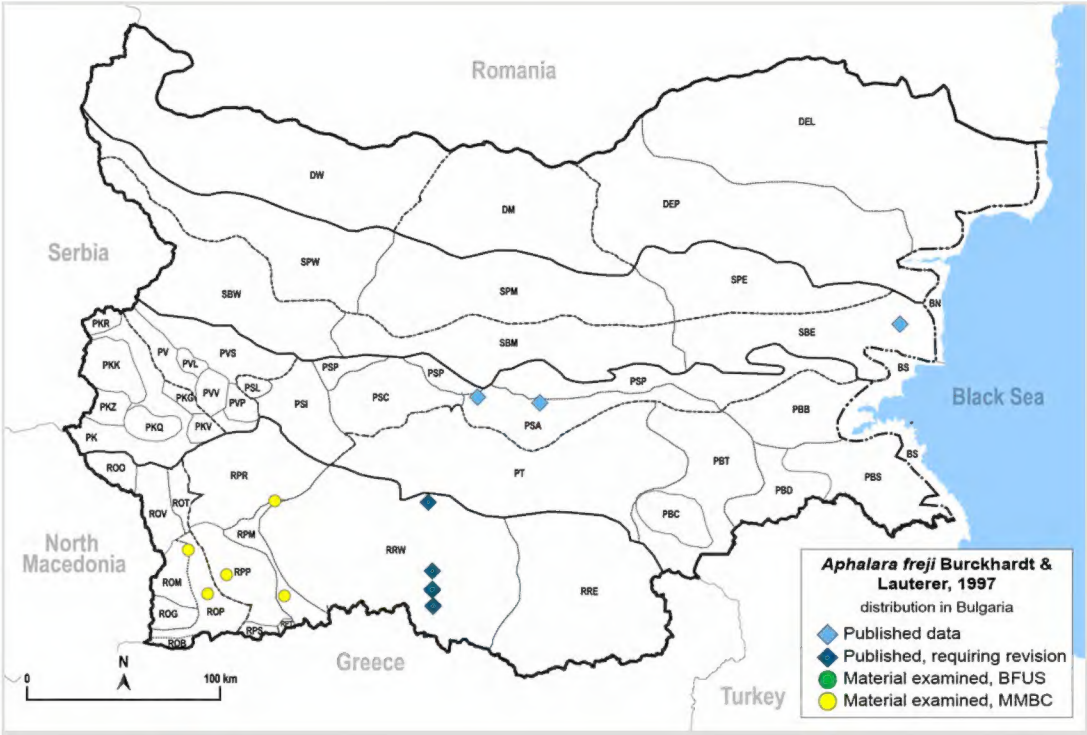


Figure 6. [doi](#)
Distribution of *Aphalara freji* Burckhardt & Lauterer, 1997 in Bulgaria.

Notes: Before the revision by Burckhardt and Lauterer (1997a), *A. freji* was usually misinterpreted as *A. polygoni* auct. nec Foerster, 1848. Therefore, we assign here the data from Bulgaria published by Klimaszewski (1965), Głowacka and Harizanov (1983) and Głowacka (1989) as '*A. polygoni*' to *A. freji*. This is partly supported by the fact that the specimens of Głowacka and Harizanov (1983) and Głowacka (1989) were collected on *Polygonum* sp., while the host plants of *A. polygoni* Foerster, 1848 are *Rumex* spp. (Burckhardt and Lauterer 1997a).

***Aphalara maculipennis* Löw, 1886**

Diagnosis: Adult (Fig. 7a) and fifth-instar immature. Ossiannilsson (1992).

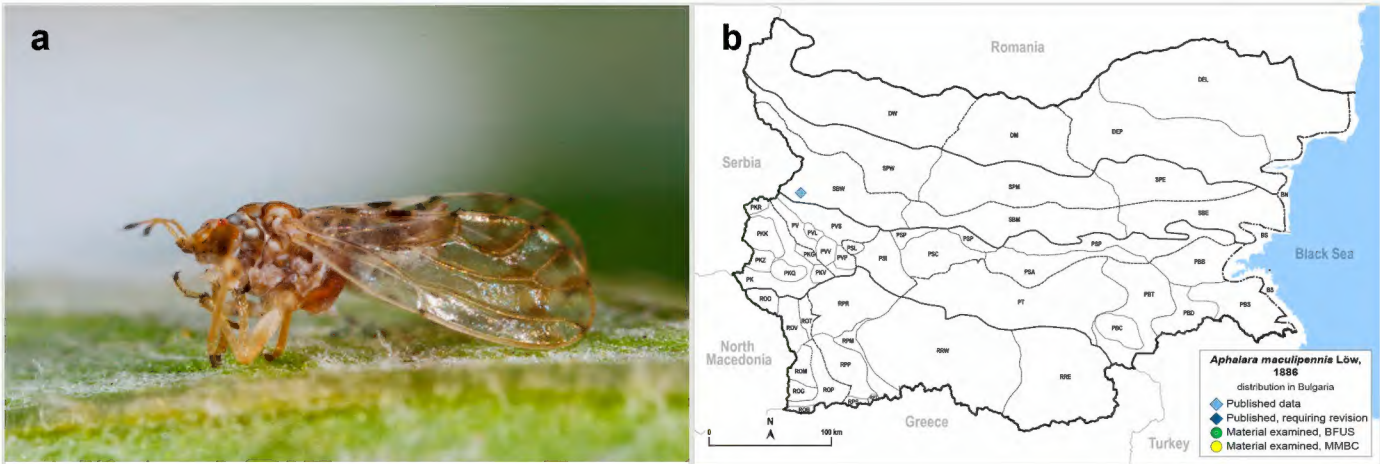


Figure 7.
Aphalara maculipennis Löw, 1886.
a: *Aphalara maculipennis*, adult male (dead specimen); [doi](#)
b: Distribution of *Aphalara maculipennis* in Bulgaria. [doi](#)

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 7b). Published records: without locality data (Pramatarova et al. 2023); SBW (Pramatarova et al. 2024). Material examined: SBW.

Aphalara nigrimaculosa Gegechkori, 1981

Diagnosis: Adult (Fig. 8a). Gegechkori (1981), Burckhardt and Lauterer (1997a). **Fifth instar immature** (Fig. 8b).

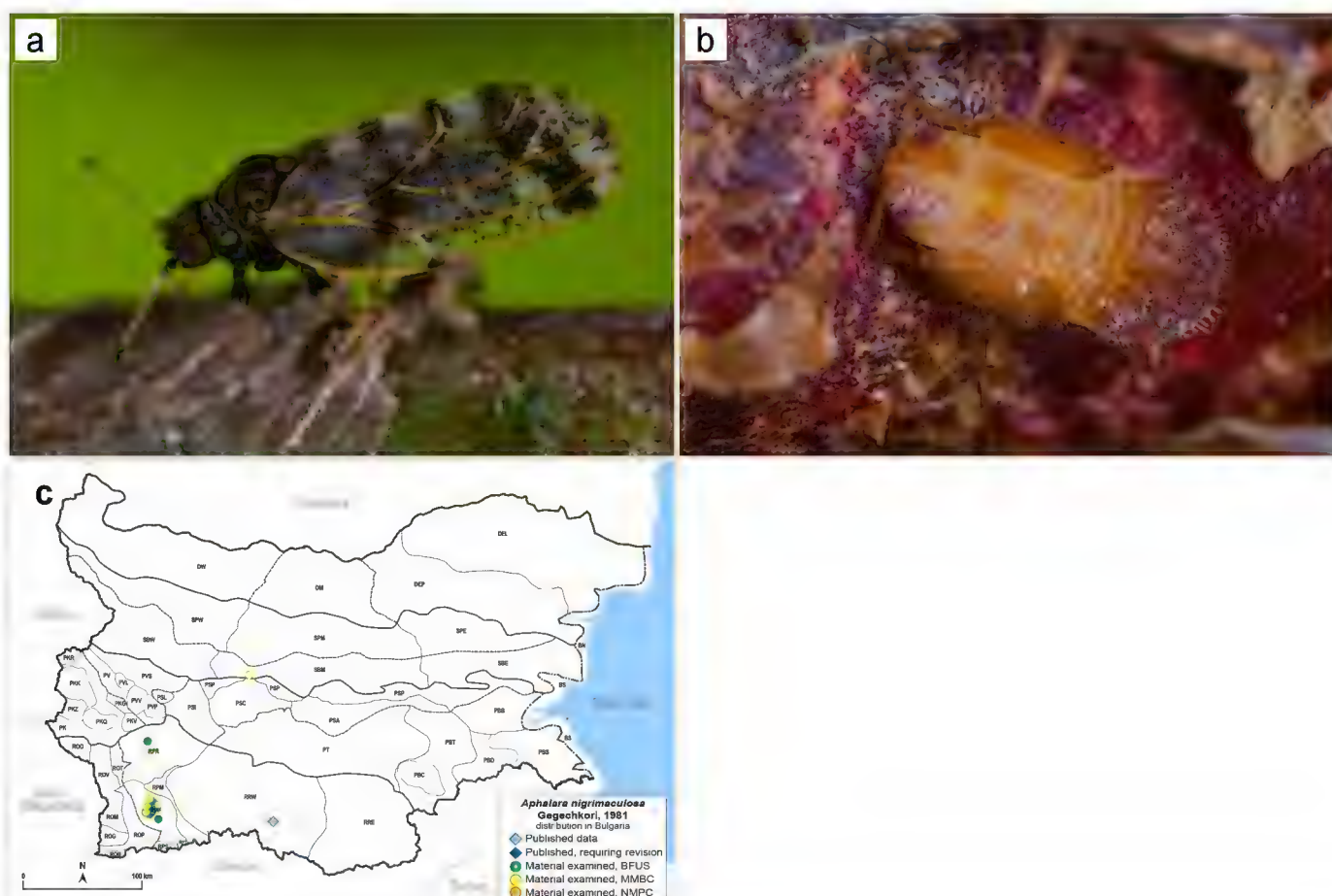


Figure 8.

Aphalara nigrimaculosa Gegechkori, 1981.

a: *Aphalara nigrimaculosa*, adult female; [doi](#)

b: *Aphalara nigrimaculosa*, immature on *Rumex acetosella*; [doi](#)

c: Distribution of *Aphalara nigrimaculosa* in Bulgaria. [doi](#)

Feeds on: So far, the only known host plant of *Aphalara nigrimaculosa* was *Rumex alpinus* L. (Gegechkori 1981, Burckhardt and Lauterer 1997a). In Bulgaria, we collected adults and immatures on *Rumex acetosella* L., which represents a new host plant record for the species.

Distribution: General distribution. Bulgaria, Greece, Caucasus (Burckhardt and Lauterer 1997a). **Distribution in Bulgaria** (Fig. 8c). Published records: RPP (Głowacka 1989, as *A. sauteri*); RRW (Harizanov and Lauterer 1968, as *Aphalara exilis*; Pramatarova et al. 2024); without locality data (Burckhardt and Lauterer 1997a, Pramatarova et al. 2023). Material examined: RPP, RPR, RRW, SBM.

Notes: The records of *Aphalara sauteri* Burckhardt, 1983 from the Pirin Mts. published by Głowacka (1989) are assigned here to *A. nigrimaculosa*. This is based on other specimens from the same area from MMBC and BFUS, which were examined by us and all belong to *A. nigrimaculosa*. See also the comment under *A. sauteri* in the section 'Doubtful records' below.

Aphalara polygona Foerster, 1848

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992), as *A. rumicicola*. According to Burckhardt and Lauterer (1997a), *A. rumicicola* Klimaszewski, 1966 is a junior synonym of *A. polygona*.

Feeds on: *Rumex* sp. according to Głowacka and Harizanov (1983) and Głowacka (1989). The confirmed host plants are *Rumex acetosa* L., *R. acetosella* L. and *R. scutatus* L. (Ossiannilsson 1992, Burckhardt and Lauterer 1997a).

Distribution: General distribution. Northern, Central and Eastern Europe (Burckhardt and Lauterer 1997a). **Distribution in Bulgaria** (Fig. 9). Published records: RRW, ROP (Głowacka and Harizanov 1983, Głowacka 1989, as *A. rumicicola*); without locality data (Pramatarova et al. 2023); RRW (Pramatarova et al. 2024). Material examined: PKZ, PSL, RPM, RPP, RPR, RRW.

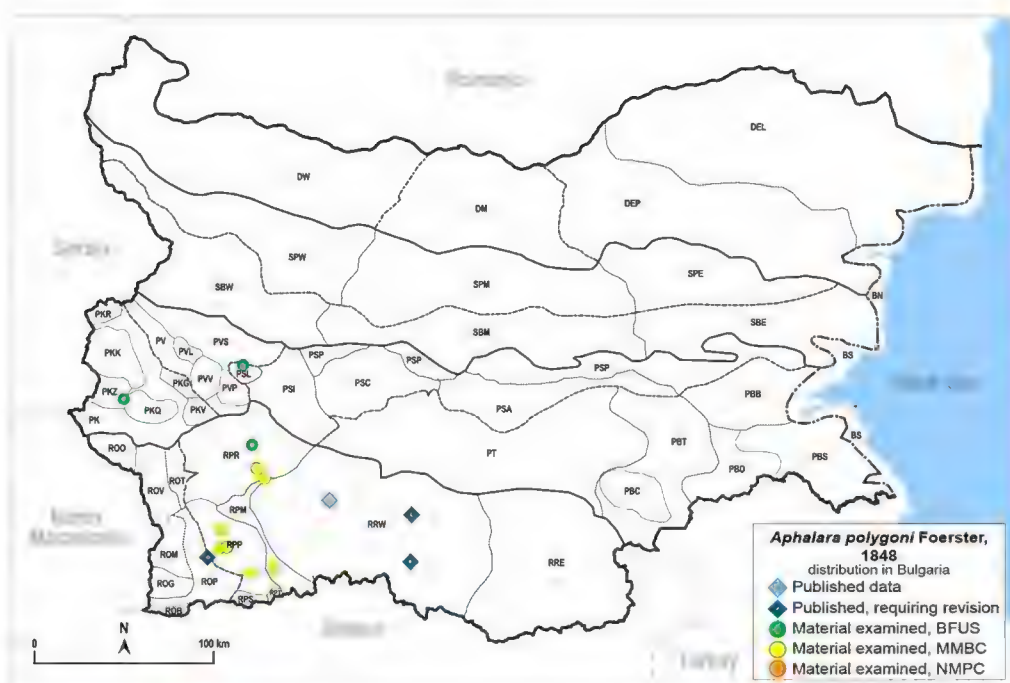


Figure 9. [doi](https://doi.org/10.1111/1365-3113.12111)

Distribution of *Aphalara polygona* Foerster, 1848 in Bulgaria.

Genus *Colposcencia* Enderlein, 1929

Colposcencia aliena (Löw, 1881)

Diagnosis: Adult (Fig. 10a). Loginova (1960); Tamanini (1977), as *C. italica*. **Fifth instar immature** (Fig. 10b).

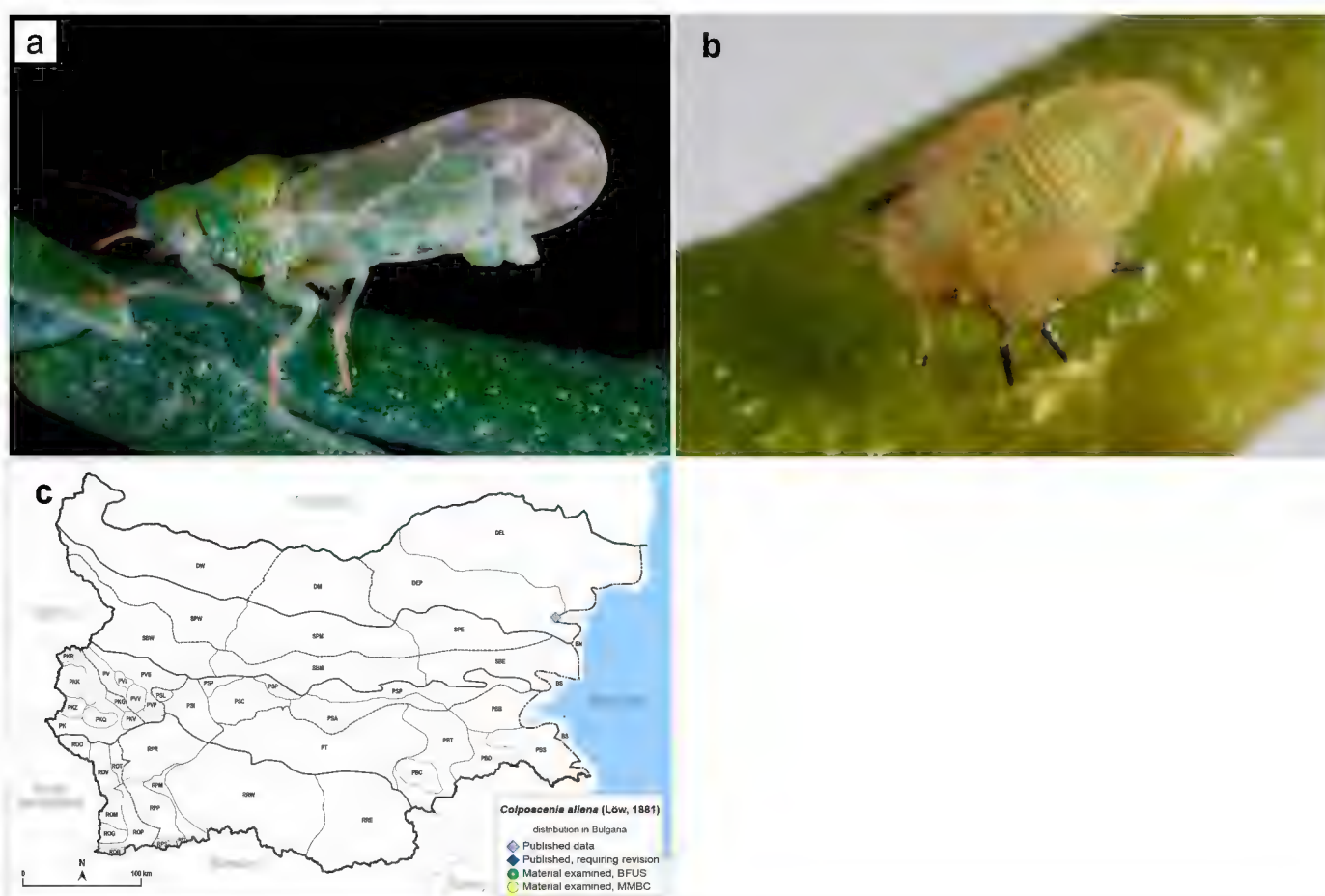


Figure 10.

Colposcencia aliena (Löw, 1881).

a: *Colposcencia aliena*, adult male; [doi](#)

b: *Colposcencia aliena*, immature; [doi](#)

c: Distribution of *Colposcencia aliena* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Tamarix* spp. (Burckhardt 1989, Spodek et al. 2017). In Bulgaria, we collected adults and immatures on *Tamarix ramosissima* Ledeb., which is thus one of the confirmed host plants.

Distribution: General distribution. Southern Europe, North Africa, Ethiopia, Middle East, Caucasus, Central Asia, China. **Distribution in Bulgaria** (Fig. 10c). Published records: DEP (Pramatarova et al. 2024). Material examined: DEP.

Colposcencia bidentata Burckhardt, 1988

Diagnosis: Adult (Fig. 11a). Burckhardt (1988).

Feeds on: The genus *Tamarix* was indicated as the host plant of *Colposcencia bidentata* (Burckhardt 1988). In Bulgaria, we collected adults on *Tamarix ramosissima* Ledeb., a probable host plant species. It is possible that *C. bidentata* also develops on *T. tetrandra* Pall. ex. M.B., as mixed communities of both *Tamarix* species occur in Bulgaria.

Distribution: General distribution. Bulgaria and Turkey. **Distribution in Bulgaria** (Fig. 11b). Published records: RRE (Pramatarova et al. 2024). Material examined: ROM, ROP, RRE.

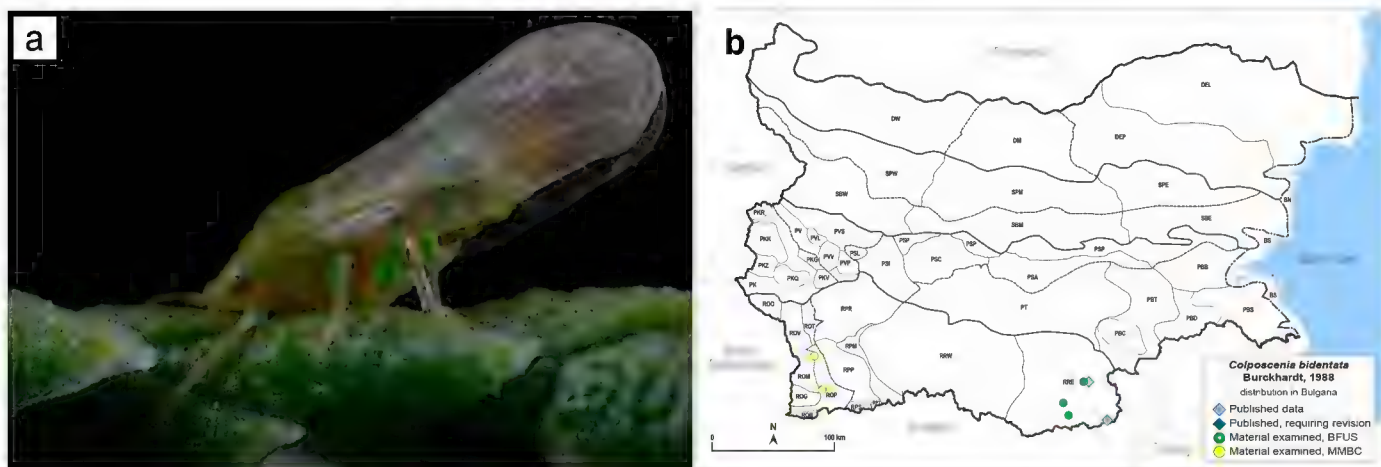


Figure 11.

Colposcения bidentata Burckhardt, 1988.

a: *Colposcения bidentata*, adult, female; [doi](#)

b: Distribution of *Colposcения bidentata* in Bulgaria. [doi](#)

Colposcения osmanica Vondráček, 1953

Nomenclature:

Colposcения kiritshenkoi Loginova, 1960: 57, **syn. nov.**

Diagnosis: Adult (Fig. 12a, b, c). Vondráček (1953), Loginova (1974b); Loginova (1960), Loginova (1974b), as *C. kiritshenkoi*. Based on numerous specimens collected at different times at several places in Bulgaria, we conclude here that *C. osmanica* and *C. kiritshenkoi* are seasonal forms of one and the same species, differing only in their colouration (*C. osmanica* - summer form, *C. kiritshenkoi* - overwintering form). Both colour forms were collected by us in Bulgaria (Fig. 12a, b). The male and female terminalia of specimens from Bulgaria are illustrated in Fig. 12c. Further details on the proposed synonymy can be found in the 'Discussion' section below.

Feeds on: *Colposcения osmanica* (as *C. kiritshenkoi*) has been recorded from *Tamarix negevensis* Zohary, *T. parviflora* DC., *T. ramosissima* Ledeb., *T. senegalensis* DC. and *T. smyrnensis* Bunge (Gegechkori and Loginova 1990, Spodek et al. 2017). In Bulgaria, we collected adults on *T. ramosissima* and perhaps also *T. tetrandra* Pall. ex. M.B., which often grows together with the first species in mixed stands.

Distribution: General distribution. South-eastern Europe (Bulgaria, Ukraine, southern Russia), Middle East, Caucasus, Central Asia. **Distribution in Bulgaria** (Fig. 12d). Published records: ROP (Klimaszewski 1963, Klimaszewski 1965, Głowacka 1989), Bulgaria, without locality data (Gegechkori and Loginova 1990; as *C. kiritshenkoi*, Maryańska-Nadachowska (2002)); ROV (Pramatarova et al. 2024). Material examined: BN, BS, DW, PBT, ROM, ROP, ROV, RPP, RRE, SPE.

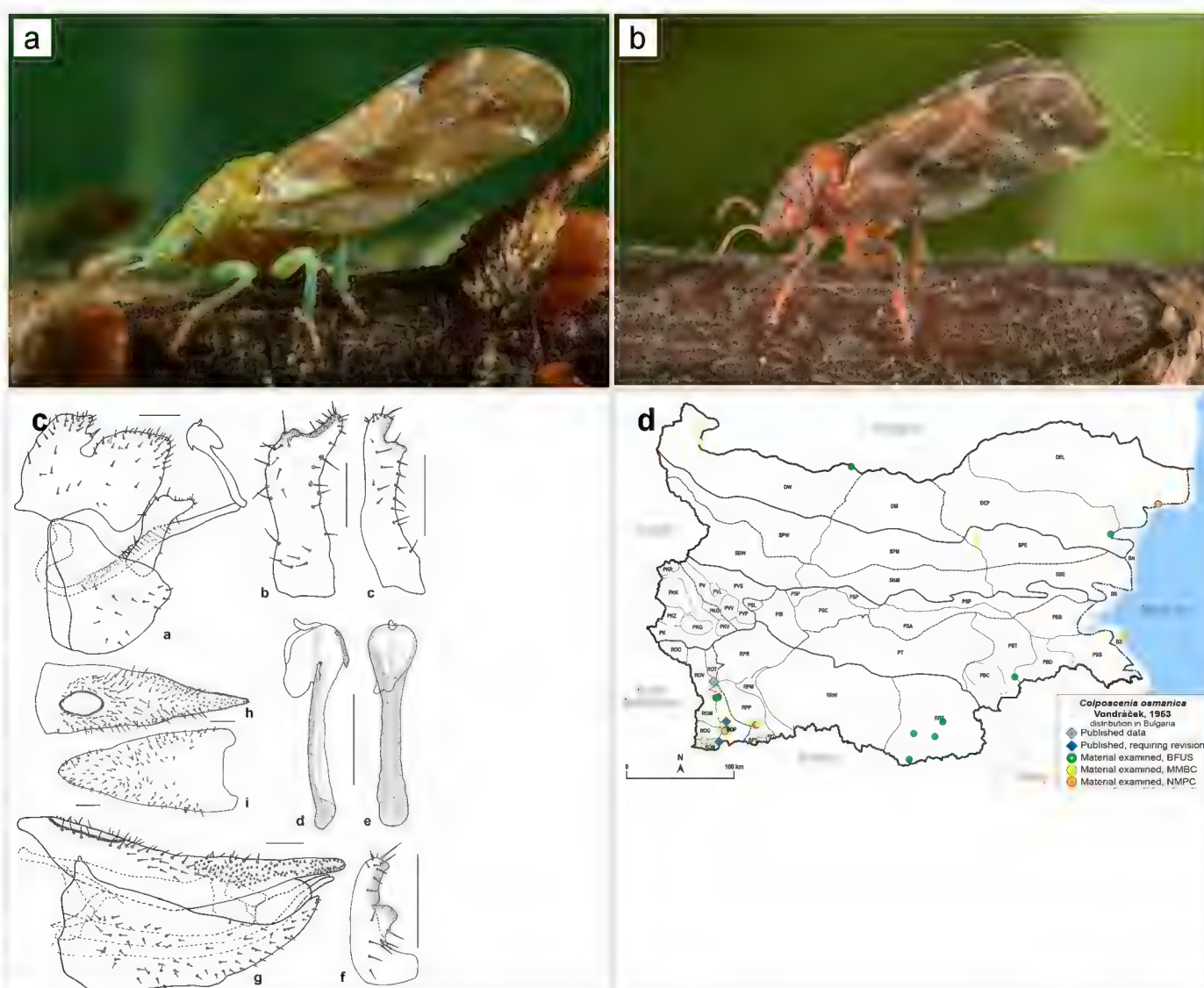


Figure 12.

Colposcencia osmanica Vondráček, 1953.

a: *Colposcencia osmanica*, adult female, summer specimen; [doi](#)

b: *Colposcencia osmanica*, adult male, overwintering specimen; [doi](#)

c: *Colposcencia osmanica*, male and female terminalia. **a** – male terminalia, lateral view; **b** – paramere, inner surface, lateral view; **c** – paramere, posterior view; **d** – distal segment of aedeagus, lateral view; **e** – distal segment of aedeagus, dorsal view; **f** – paramere, dorsal view; **g** – female terminalia, lateral view; **h** – female proctiger, dorsal view; **i** – female subgenital plate, ventral view. Scale bars: 0.1 mm; [doi](#)

d: Distribution of *Colposcencia osmanica* in Bulgaria. [doi](#)

Colposcencia traciana (Klimaszewski, 1970)

Diagnosis: Adult (Fig. 13a). Klimaszewski (1970), as *Stigmaphalara tamaricis traciana*; Loginova (1974b).

Feeds on: As with all other *Colposcencia* species, the host plants of *C. traciana* belong to the plant genus *Tamarix* (Klimaszewski 1970). Seljak (2020) found it on *Tamarix gallica* L. in Slovenia. In Bulgaria, we collected adults on *Tamarix ramosissima* Ledeb., which is another probable host species.

Distribution: General distribution. Slovenia (Seljak 2020), Bulgaria, Greece. **Distribution in Bulgaria** (Fig. 13b). Published records: BS (Klimaszewski 1965, as

Stigmaphalara tamaricis), BS, PBS (Klimaszewski 1970, Pramatarova et al. 2024).
Material examined: BS, ROP.

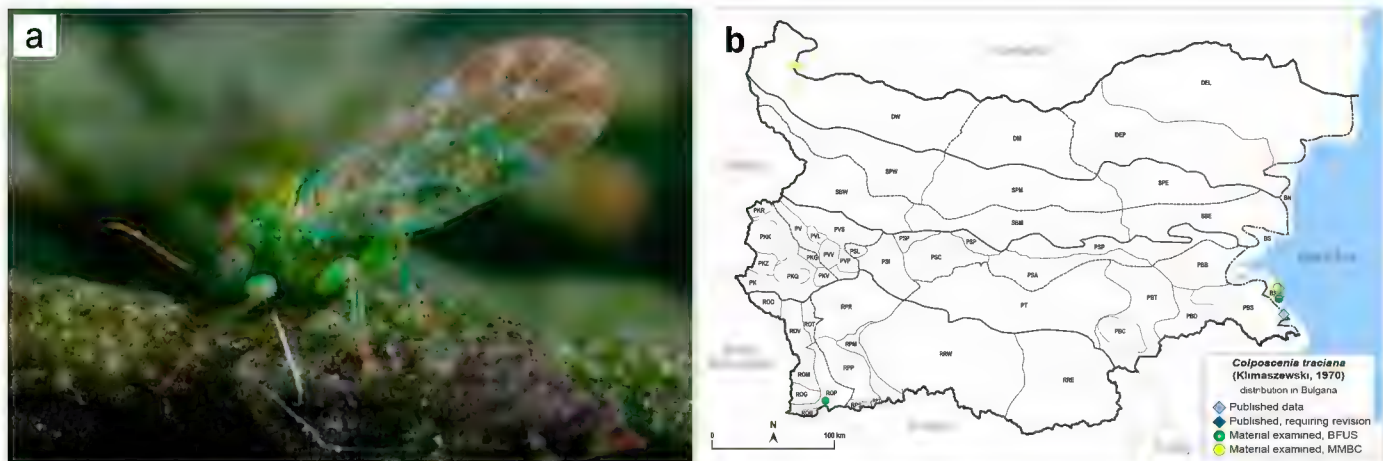


Figure 13.

Colposcения tracia (Klimaszewski, 1970).

a: *Colposcения tracia*, adult male; [doi](#)

b: Distribution of *Colposcения tracia* in Bulgaria. [doi](#)

Notes: The type locality of *C. tracia* is in Bulgaria: Primorsko (Klimaszewski 1970).

Genus *Craspedolepta* Enderlein, 1921

Craspedolepta araneosa Loginova, 1962

Diagnosis: Adult (Fig. 14a). Loginova (1962), Loginova (1963a), Loginova (1964). The Bulgarian specimens agree well with the original description (Loginova 1962) as regards the presence of long setae on the body (especially on the dorsal surface of the head and thorax), the pattern of the forewings and the details of the male paramere and the female terminalia. They differ in the denser and larger surface spinules on the forewing membrane, which are more similar to the condition in *C. artemisiae* than the illustration in the original description. More material is needed to assess the taxonomic significance of this character.

Feeds on: In Bulgaria, we collected adults on *Artemisia pedemontana* Balb., which represents a new probable host plant for the species. In Russia and Central Asia, *C. araneosa* was collected on *Artemisia austriaca* Jacq., *A. lerceana* Weber ex Stechm., *A. nitrosa* Weber ex Stechm., *A. schrenkiana* Ledeb. and *A. sublessingiana* (B. Keler) Krasch. ex Poljakov (Loginova 1962).

Distribution: General distribution. Russia (south-east of the European part: Orenburg Region), Central Asia (Kazakhstan, Uzbekistan, Tajikistan) (Loginova 1962, Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 14b). Material examined: BN.

Notes: New record for Bulgaria and the Balkan Peninsula.

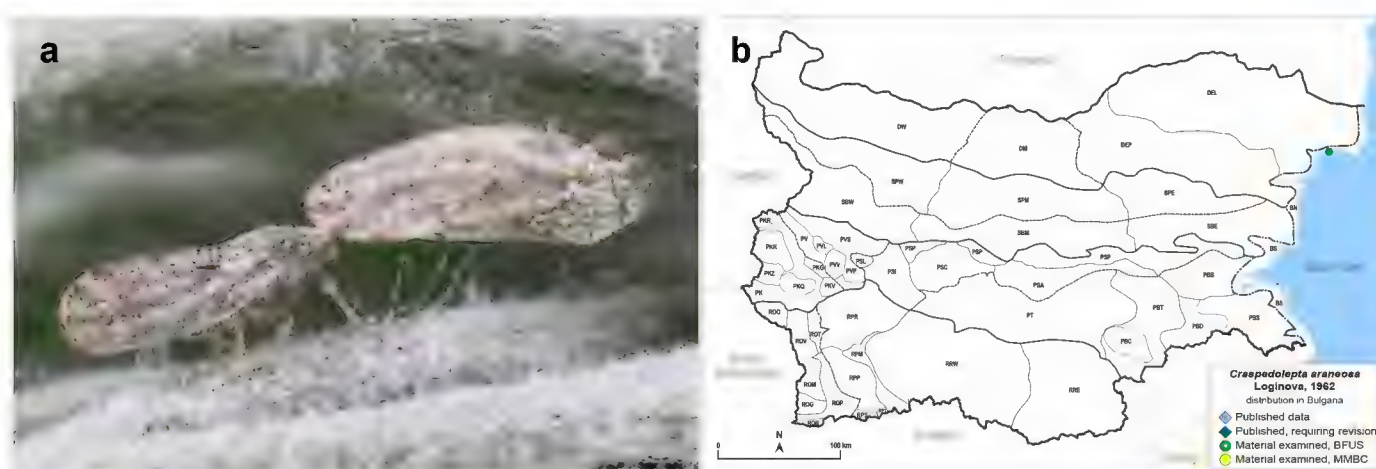


Figure 14.

Craspedolepta araneosa Loginova, 1962.

a: *Craspedolepta araneosa*, adult male and female; [doi](#)

b: Distribution of *Craspedolepta araneosa* in Bulgaria. [doi](#)

Craspedolepta artemisiae (Foerster, 1848)

Diagnosis: Adult. Loginova (1963a), Klimaszewski (1975).

Distribution: General distribution. Central, South and Eastern Europe, Russia (European part, Siberia and Far East), Kazakhstan (Gegechkori and Loginova 1990).

Distribution in Bulgaria (Fig. 15). Published records: RRW (Lauterer and Malenovský 2002). Material examined: RRW.

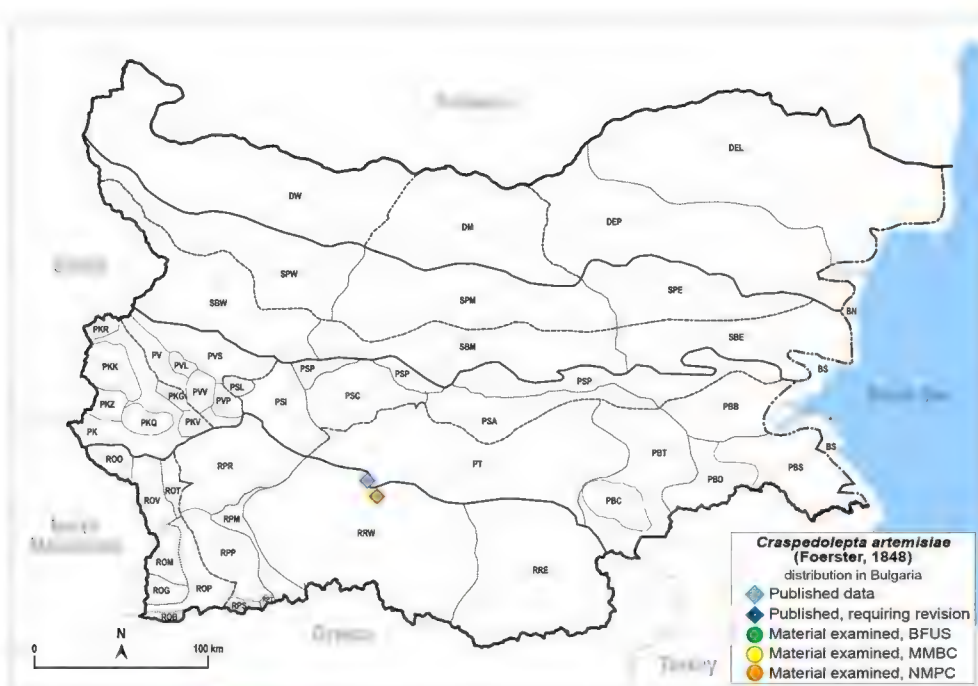


Figure 15. [doi](#)

Distribution of *Craspedolepta artemisiae* (Foerster, 1848) in Bulgaria.

Craspedolepta bulgarica Klimaszewski, 1961

Diagnosis: Adult (Fig. 16a). Klimaszewski (1961a), Loginova (1963a), Klimaszewski (1975).

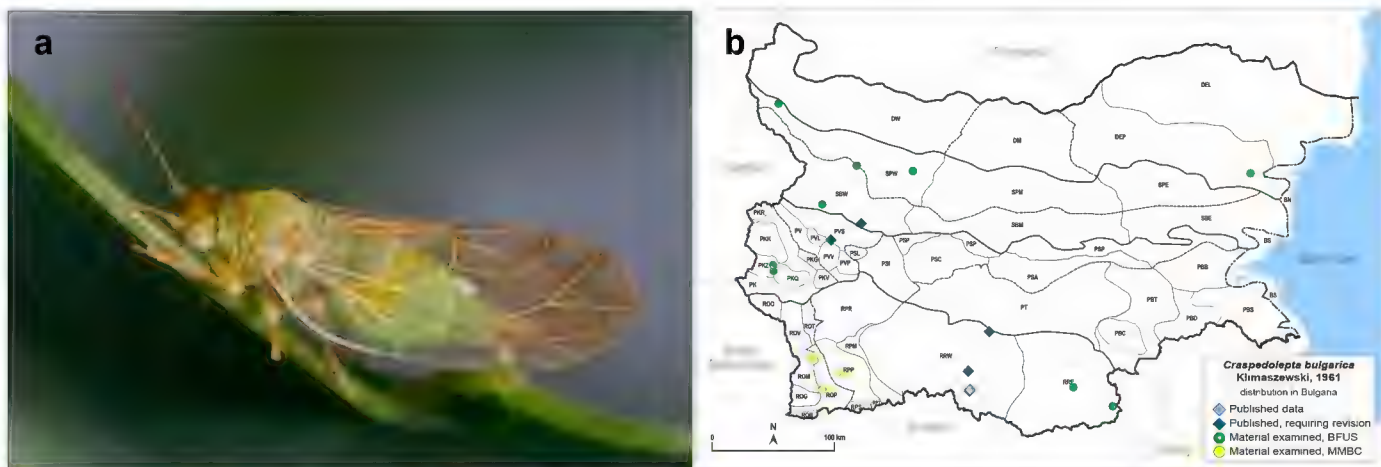


Figure 16.

Craspedolepta bulgarica Klimaszewski, 1961.

a: *Craspedolepta bulgarica*, adult female; [doi](#)

b: Distribution of *Craspedolepta bulgarica* in Bulgaria. [doi](#)

Feeds on: Collected on *Achillea* sp. in Bulgaria (Głowacka and Harizanov 1983, Pramatarova et al. 2024). Several *Achillea* spp. have been reported as confirmed or probable host plants in other countries (Burckhardt and Lauterer 1993, Conci et al. 1993, Lauterer 1993, Al-Khawaldeh et al. 1997, Seljak et al. 2008).

Distribution: General distribution. Central, South and Eastern Europe, Caucasus, Middle East and Central Asia (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 16b). Published records: PVS, RRW, SBW (Klimaszewski 1961a, Głowacka and Harizanov 1983, Pramatarova et al. 2024). Material examined: DEP, PKZ, PVS, ROM, ROP, RPP, RRE, RRW, SBW, SPW.

Notes: The type locality of *C. bulgarica* is Smoljan in the Rhodopi Mts. (Klimaszewski 1961a).

Craspedolepta conspersa (Löw, 1888)

Diagnosis: Adult. Klimaszewski (1961a), Loginova (1963a), Loginova (1966), Conci and Tamanini (1983).

Distribution: General distribution. Central, South and Eastern Europe (Conci and Tamanini 1983, Cho et al. 2017a). **Distribution in Bulgaria** (Fig. 17). Published records: Bulgaria, without locality data (Klimaszewski 1973), RRW (Głowacka and Harizanov 1983). Material examined: PSI.

Notes: In his checklist of Palaearctic psyllids, Klimaszewski (1973) listed *C. conspersa* from Bulgaria, referring to his earlier work (Klimaszewski 1961a). However, this was probably a mistake, as Klimaszewski (1961a) studied specimens of *C. conspersa* only from Hungary. The species was again reported from Bulgaria by Głowacka and Harizanov (1983) and its occurrence in the country was also confirmed on the basis of our samples.

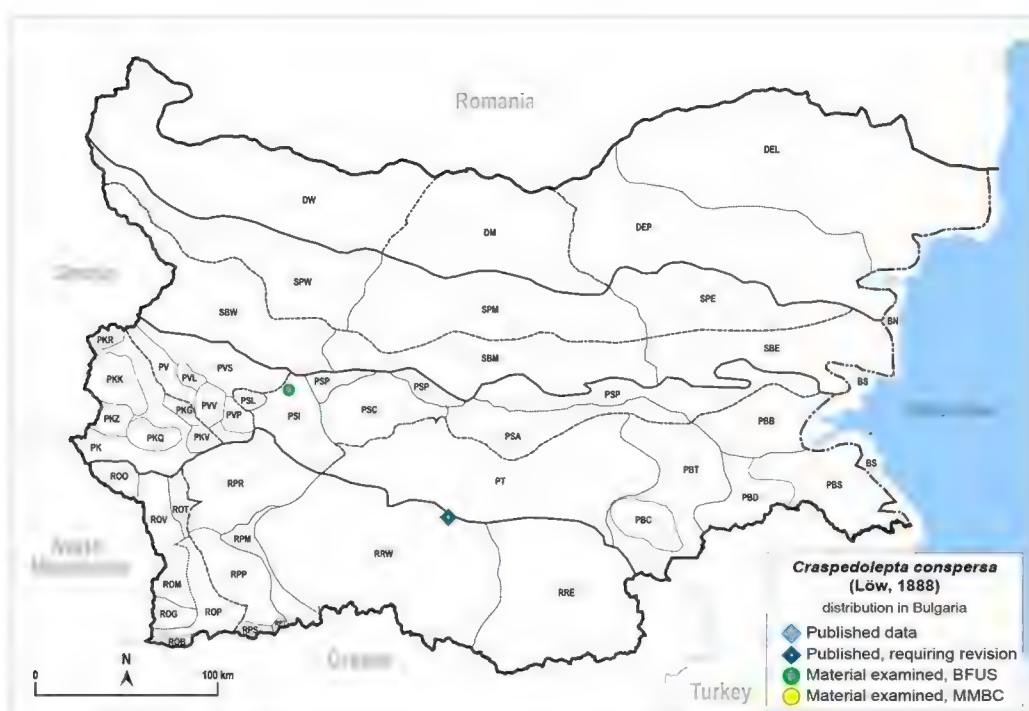


Figure 17. [doi](#)

Distribution of *Craspedolepta conspersa* (Löw, 1888) in Bulgaria.

Craspedolepta innoxia (Foerster, 1848)

Diagnosis: Adult (Fig. 18a). Vondráček (1957a), Loginova (1963a).

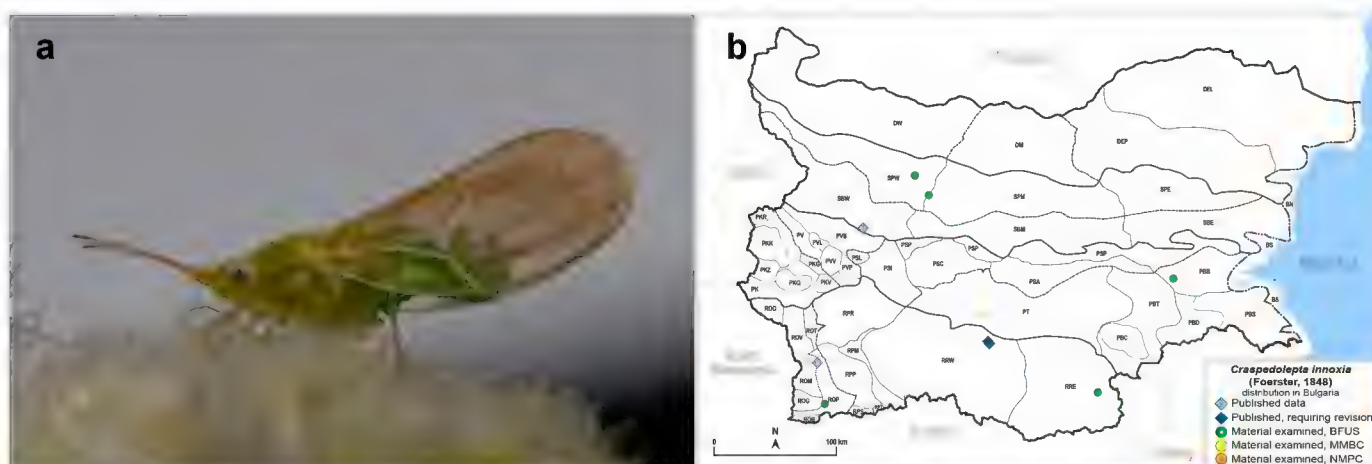


Figure 18.

Craspedolepta innoxia (Foerster, 1848).

a: *Craspedolepta innoxia*, adult male; [doi](#)

b: Distribution of *Craspedolepta innoxia* in Bulgaria. [doi](#)

Feeds on: Collected on *Daucus carota* L. (Głowacka and Harizanov 1983), which is known as a host plant (Lauterer 1965).

Distribution: General distribution. Central, South and Eastern Europe, North Africa, Caucasus, Middle East, Central Asia (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 18b). Published records: ROM, RRW, SBW (Głowacka and Harizanov 1983, Lauterer 1991, Pramatarova et al. 2024). Material examined: PBB, PT, ROM, ROP, RRE, SBW, SPW.

Craspedolepta latior Wagner, 1944

Diagnosis: Adult. Loginova (1963a), Klimaszewski (1975), Ossiannilsson (1992), Burckhardt and Lauterer (2009). **Fifth-instar immature.** Ossiannilsson (1992).

Feeds on: Collected on *Artemisia* sp. in Bulgaria (Głowacka and Harizanov 1983). Monophagous on *Artemisia vulgaris* L. in Europe (Ossiannilsson 1992, Burckhardt and Lauterer 2009).

Distribution: General distribution. Central, Northern and Eastern Europe, Russia (European part, Siberia and Far East), Central Asia, Mongolia, Japan (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 19). Published records: RRW (Głowacka and Harizanov 1983).

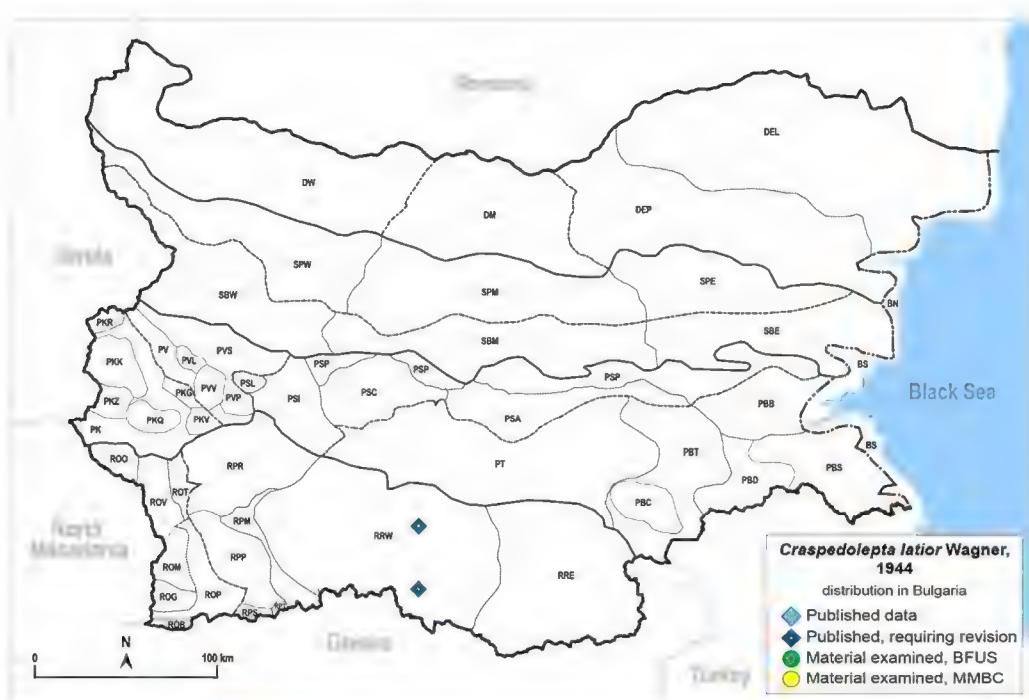


Figure 19. [doi](#)

Distribution of *Craspedolepta latior* Wagner, 1944 in Bulgaria.

Notes: The only record of *C. latior* from Bulgaria as published by Głowacka and Harizanov (1983) from the Western Rhodope Mts. requires a revision, as *Craspedolepta* spp. associated with *Artemisia* spp. have often been misidentified in the past. We have not been able to confirm the occurrence of *C. latior* in the country from our own collections or from P. Lauterer's material in MMBC.

Craspedolepta malachitica (Dahlbom, 1851)

Diagnosis: Adult (Fig. 20a). Loginova (1963a), Klimaszewski (1975), Ossiannilsson (1992), Burckhardt and Lauterer (2009). **Fifth-instar immature.** Ossiannilsson (1992)

Feeds on: In Bulgaria, adults were collected on *Artemisia absinthium* L. (Maryńska-Nadachowska et al. 1992, Pramatarova et al. 2024), a confirmed host plant (Ossiannilsson 1992, Burckhardt and Lauterer 2009).

Distribution: General distribution. Europe, Turkey, Caucasus, Central Asia, Russia (European part, Siberia, Far East), Mongolia. **Distribution in Bulgaria** (Fig. 20b). Published records: PKQ, PVS (Maryańska-Nadachowska et al. 1992, Pramatarova et al. 2024). Material examined: BN, PKQ, PVS, ROP, ROB.

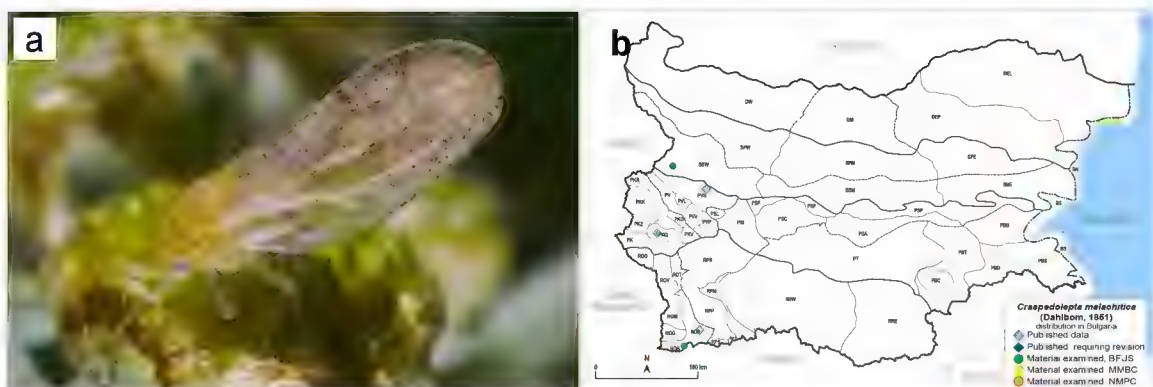


Figure 20.

Craspedolepta malachitica (Dahlbom, 1851).

a: *Craspedolepta malachitica*, adult; [doi](#)

b: Distribution of *Craspedolepta malachitica* in Bulgaria. [doi](#)

Notes: *Craspedolepta malachitica* was first published from Bulgaria by Maryańska-Nadachowska et al. (1992), which was overlooked by Pramatarova et al. (2024).

Craspedolepta nebulosa (Zetterstedt, 1828)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Feeds on: In Bulgaria, adults were collected on *Epilobium angustifolium* L. (Głowacka and Harizanov 1983, Pramatarova et al. 2024), the only known host plant (Ossiannilsson 1992).

Distribution: General distribution. Holarctic. **Distribution in Bulgaria** (Fig. 21). Published records: RPR, RPW (Głowacka and Harizanov 1983, Pramatarova et al. 2024). Material examined: PVV, RPP, RPR.

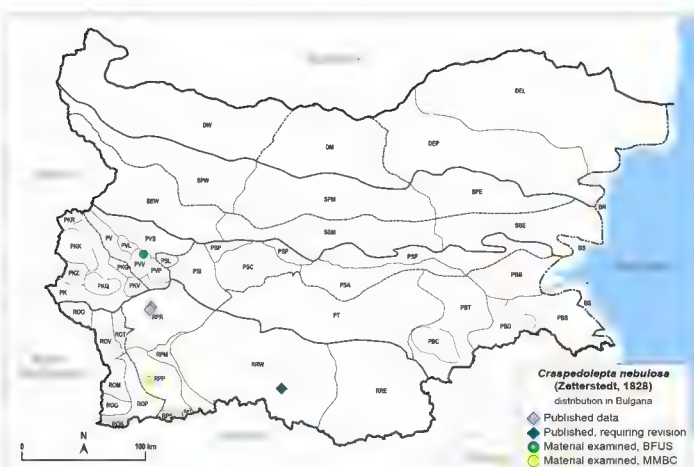


Figure 21. [doi](#)

Distribution of *Craspedolepta nebulosa* (Zetterstedt, 1828) in Bulgaria.

Craspedolepta nervosa (Foerster, 1848)

Diagnosis: Adult (Fig. 22a) and fifth-instar immature. Ossiannilsson (1992).

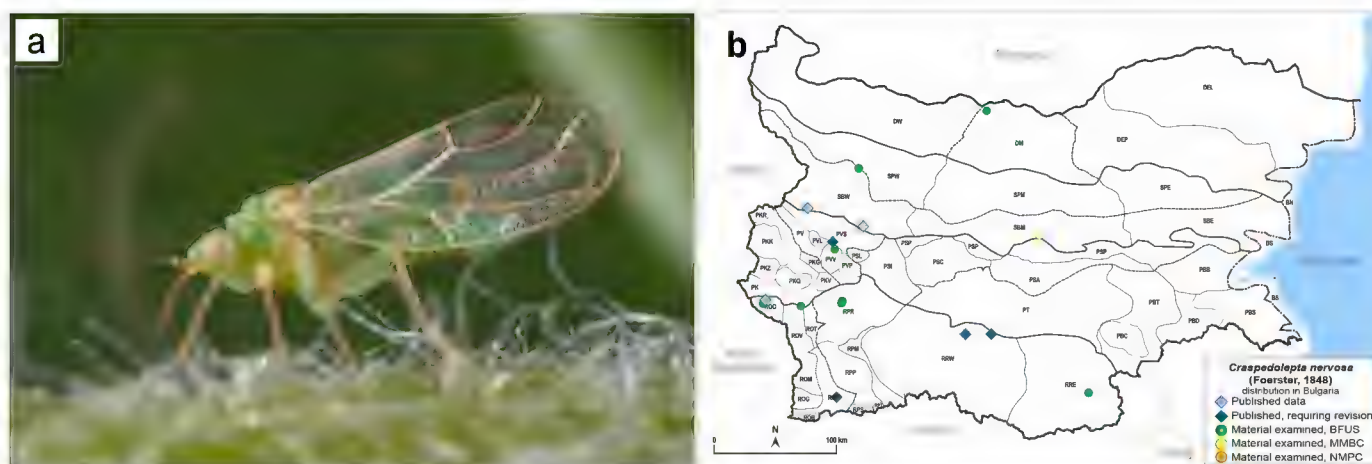


Figure 22.

Craspedolepta nervosa (Foerster, 1848).

a: *Craspedolepta nervosa*, adult male; [doi](#)

b: Distribution of *Craspedolepta nervosa* in Bulgaria. [doi](#)

Feeds on: We collected adults on *Achillea* sp. in Bulgaria (Pramatarova et al. 2024). Mainly confirmed from *Achillea millefolium* L. in literature (Conci et al. 1993, Ossiannilsson 1992), but probably more widely oligophagous, as it was reported from *Achillea*, *Anthemis* and *Tanacetum* spp. (Gegechkori and Loginova 1990) and reared on *Cirsium arvense* (Ossiannilsson 1992).

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria:** (Fig. 22b). Published records: PVS, ROO, ROP, RRW, SBW (Joakimov 1909, Klimaszewski 1965, Głowacka and Harizanov 1983, Pramatarova et al. 2024). Material examined: DM, PVV, ROO, ROV, RPR, RRE, SBM, SBW.

Craspedolepta omissa Wagner, 1944

Diagnosis: Adult (Fig. 23a). Loginova (1963a), Klimaszewski (1975).

Feeds on: Adults were collected on *Artemisia vulgaris* L. in Bulgaria (Głowacka and Harizanov 1983, Pramatarova et al. 2024), which is a confirmed host plant (Conci et al. 1993).

Distribution: General distribution. Central and Eastern Europe, Turkey, Russia (European part, Siberia and Far East), Central Asia, Mongolia (Gegechkori and Loginova 1990). **Distribution in Bulgaria:** (Fig. 23b). Published records: RPR, RRW (Głowacka and Harizanov 1983, Pramatarova et al. 2024). Material examined: RPR, ROP.

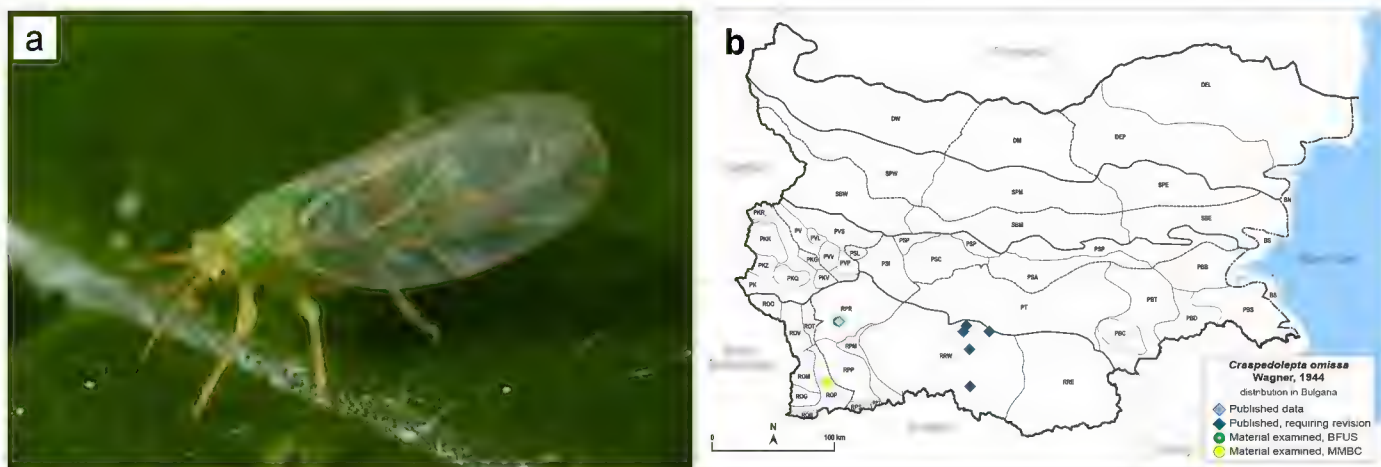


Figure 23.

Craspedolepta omissa Wagner, 1944.

a: *Craspedolepta omissa*, adult female; 

b: Distribution of *Craspedolepta omissa* in Bulgaria. [doi](#)

Craspedolepta pontica Dobreanu & Manolache, 1962

Diagnosis: Adult (Fig. 24a). Doboreanu and Manolache (1962), as *C. nervosa pontica*; Loginova (1962), as *C. inarticulata* Loginova, 1962; Loginova (1964).

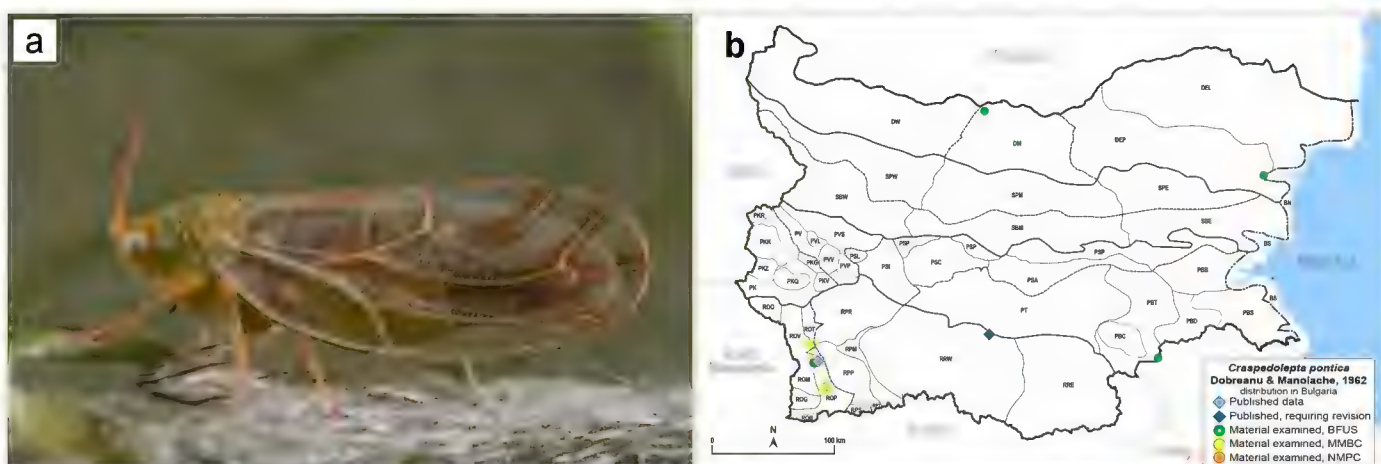


Figure 24.

Craspedolepta pontica Dobreanu & Manolache, 1962.

a: *Craspedolepta pontica*, adult female;

b: Distribution of *Craspedolepta pontica* in Bulgaria. doi:

Feeds on: According to Lauterer (1965) and Baeva (1985), the host plant of *C. pontica* is *Achillea millefolium* L. According to Gegechkori and Loginova (1990), the host plants belong to the plant genera *Achillea*, *Anthemis* and *Tanacetum*. In Bulgaria, we collected adults of *C. pontica* on *Achillea clypeolata* Sm. (Pramatarova et al. 2024), which is a probable host plant.

Distribution: General distribution. Central and South-eastern Europe, Caucasus, Middle East, Central Asia. **Distribution in Bulgaria** (Fig. 24b). Published records: ROM, RRW (Głowacka and Harizanov 1983, Pramatarova et al. 2024). Material examined: DEP, DM, PBT, ROM, ROP, ROV.

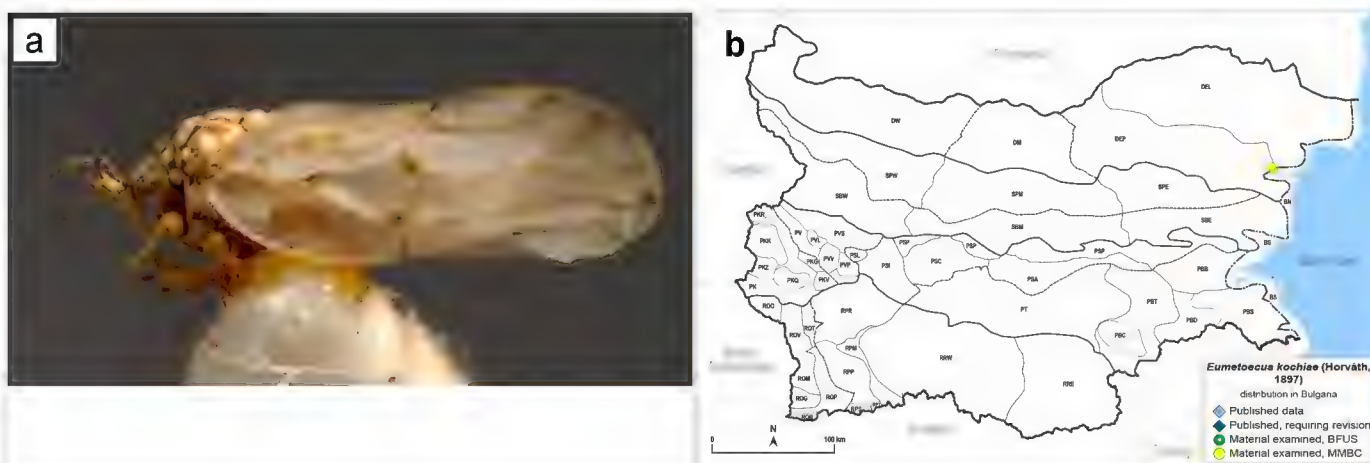


Figure 26.

Eumetoecus kochiae (Horváth, 1897).

a: *Eumetoecus kochiae*, adult male; [doi](#)

b: Distribution of *Eumetoecus kochiae* in Bulgaria. [doi](#)

Genus *Rhodochlanis* Loginova, 1964

Rhodochlanis bicolor (Scott, 1880)

Diagnosis: Adult (Fig. 27a). Burckhardt (1989); Klimaszewski (1961a), as *Craspedolepta salicorniae*; Conci and Tamanini (1984b), as *R. salicorniae*. **Fifth-instar immature**. Conci and Tamanini (1984b), as *R. salicorniae*.

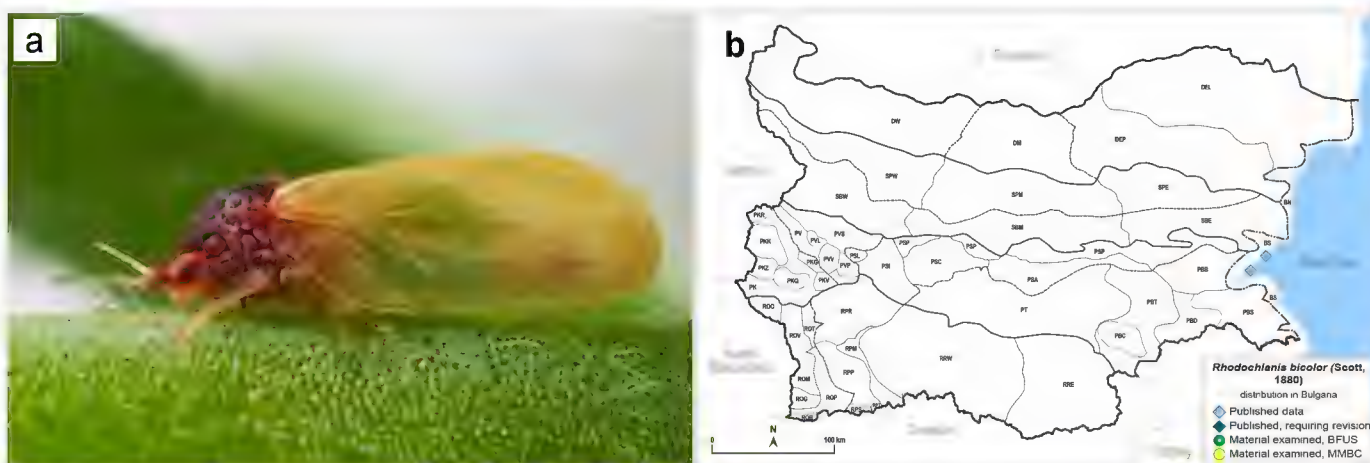


Figure 27.

Rhodochlanis bicolor (Scott, 1880).

a: *Rhodochlanis bicolor*, adult female; [doi](#)

b: Distribution of *Rhodochlanis bicolor* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Petrosimonia*, *Salicornia*, *Salsola* and *Suaeda* spp. (Conci and Tamanini 1984b, Burckhardt 1989). In Bulgaria, adults were collected on *Salicornia europaea* L. (Klimaszewski 1961a, Pramatarova et al. 2024), which is a probable host plant.

Distribution: General distribution. Southern and Eastern Europe, Caucasus, Middle East, Central Asia, Mongolia. **Distribution in Bulgaria** (Fig. 27b). Published records:

BS (Klimaszewski 1961a), as *Craspedolepta salicorniae*; (Pramatarova et al. 2024). Material examined: BS.

Notes: Klimaszewski (1961a) described *Craspedolepta salicorniae* Klimaszewski, 1961 as a new species from the Bulgarian Black Sea Coast (Burgas). According to Burckhardt (1989), *C. salicorniae* is a junior synonym of *R. bicolor*.

Subfamily Rhinocolinae Vondráček, 1957

Genus *Agonoscena* Enderlein, 1914

Agonoscena pistaciae Burckhardt & Lauterer, 1989

Diagnosis: Adult (Fig. 28a) and fifth-instar immature. Burckhardt and Lauterer (1989), Rodrigo-Gómez and Burckhardt (2023).

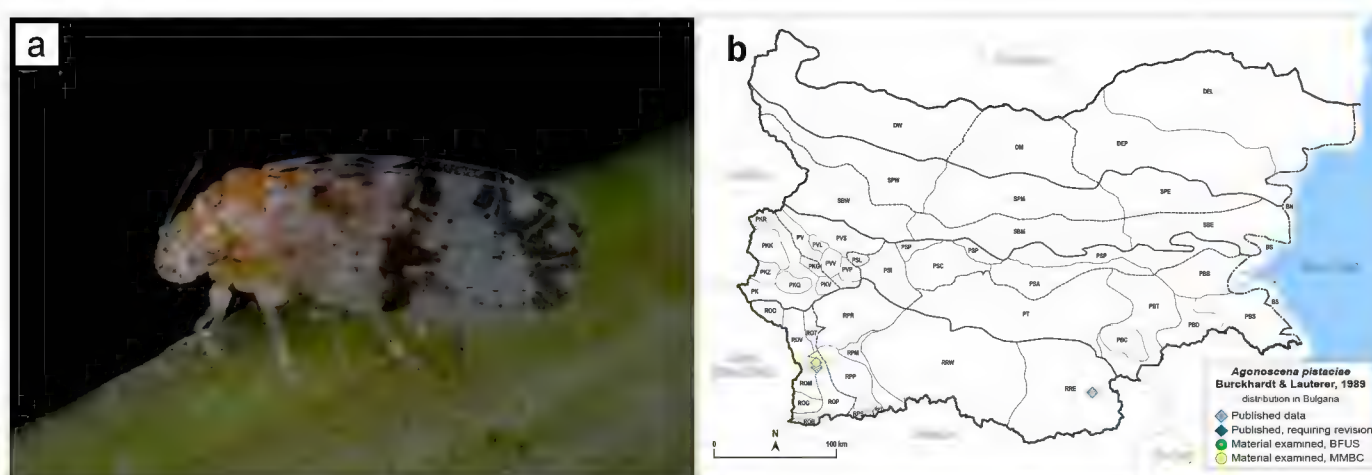


Figure 28.

Agonoscena pistaciae Burckhardt & Lauterer, 1989.

a: *Agonoscena pistaciae*, adult; [doi](#)

b: Distribution of *A. pistaciae* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, we collected adults on *Pistacia terebinthus* L., which is a host plant confirmed by Rodrigo-Gómez and Burckhardt (2023). In the Middle East, the preferred host plant of *A. pistaciae* is *Pistacia vera* L. (Burckhardt and Lauterer 1989, Rodrigo-Gómez and Burckhardt 2023).

Distribution: General distribution. Spain, south-eastern Europe, Caucasus, Middle East, Central Asia (Rodrigo-Gómez and Burckhardt 2023). **Distribution in Bulgaria** (Fig. 28b). Published records: ROM, RRE (Burckhardt and Lauterer 1989, Pramatarova et al. 2024). Material examined: ROM, RRE.

Notes: The type locality of *A. pistaciae* is in Bulgaria: Kresna Gorge (Burckhardt and Lauterer 1989).

Agonoscena targionii (Lichtenstein, 1874)

Diagnosis: Adult (Fig. 29a) and fifth-instar immature. Burckhardt and Lauterer (1989), Rodrigo-Gómez and Burckhardt (2023).

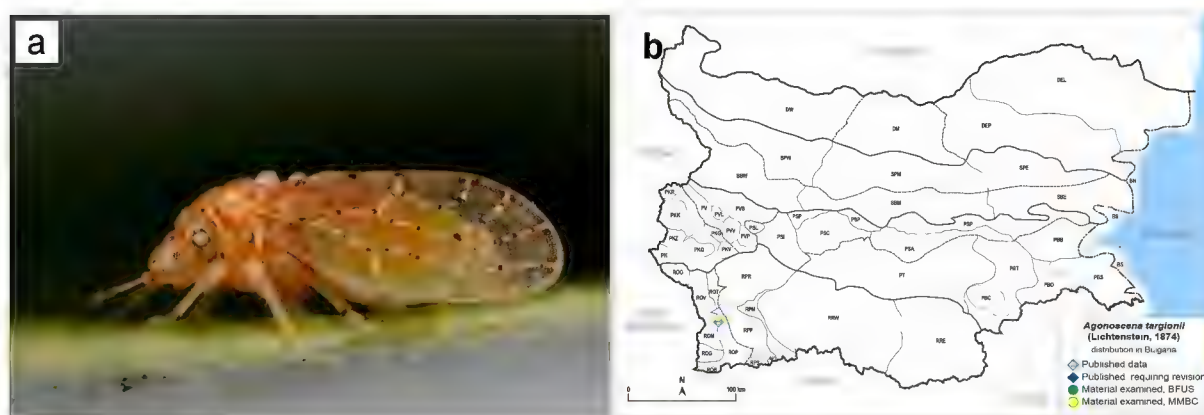


Figure 29.

Agonoscena targionii (Lichtenstein, 1874).

a: *Agonoscena targionii*, adult female; [doi](#)

b: Distribution of *Agonoscena targionii* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, we collected adults on *Pistacia terebinthus* L., which is one of the known host plants (Spodek et al. 2017, Seljak 2020). Throughout the Mediterranean Region, *A. targionii* is mainly found on *P. lentiscus* L. (Burckhardt and Lauterer 1989, Rodrigo-Gómez and Burckhardt 2023), which does not occur in the Bulgarian flora.

Distribution: General distribution. Mediterranean, Middle East. **Distribution in Bulgaria** (Fig. 29b). Published records: ROM (Pramatarova et al. 2024). Material examined: ROM.

Genus *Megagonoscena* Burckhardt & Lauterer, 1989

Megagonoscena gallicola Burckhardt & Lauterer, 1989

Diagnosis: Adult and fifth-instar immature (Fig. 30a, b). Burckhardt and Lauterer (1989).

Feeds on: Inducing galls on *Pistacia terebinthus* L. (= *P. palaestina* Boiss.) and *P. vera* L. (Burckhardt and Lauterer 1989). In Bulgaria, we collected adults and immatures on *P. terebinthus*, one of the confirmed host plants.

Distribution: General distribution. South-eastern Europe, Middle East. **Distribution in Bulgaria** (Fig. 30c). Published records: ROM, RRW (Burckhardt and Lauterer 1989, Pramatarova et al. 2024). Material examined: ROM, RRW.

Notes: The type locality of *M. gallicola* is in Bulgaria: Kresna (Burckhardt and Lauterer 1989).

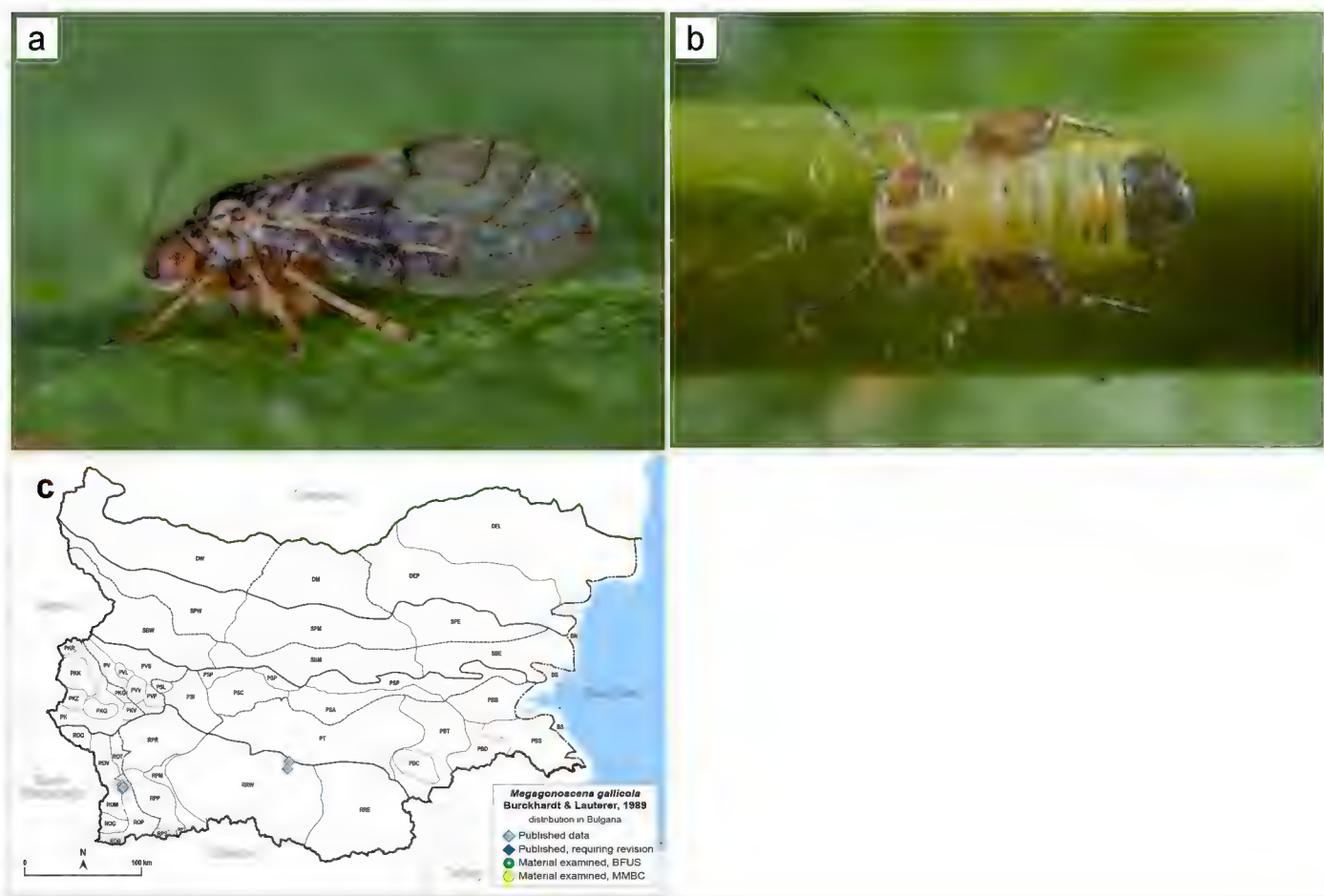


Figure 30.
Megagonoscena gallicola Burckhardt & Lauterer, 1989.
a: *Megagonoscena gallicola*, adult male; [doi](#)
b: *Megagonoscena gallicola*, fifth instar immature; [doi](#)
c: Distribution of *Megagonoscena gallicola* in Bulgaria. [doi](#)

***Megagonoscena viridis* (Baeva, 1963)**

Diagnosis: Adult (Fig. 31a) and fifth-instar immature. Burckhardt and Lauterer (1989).

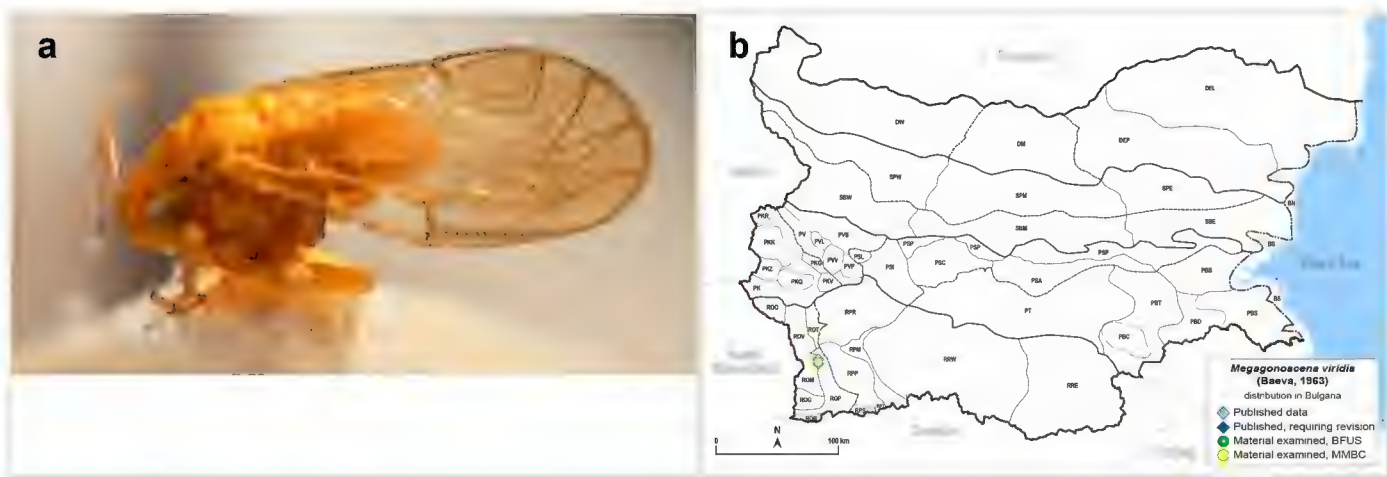


Figure 31.
Megagonoscena viridis (Baeva, 1963).
a: *Megagonoscena viridis*, adult male; [doi](#)
b: Distribution of *Megagonoscena viridis* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Pistacia atlantica* Desf., *P. terebinthus* L. (= *P. palaestina* Boiss.) and *P. vera* L. (Burckhardt and Lauterer 1989). In Bulgaria, adults were collected on *P. terebinthus*.

Distribution: General distribution. Bulgaria, Caucasus, Middle East, Central Asia. **Distribution in Bulgaria** (Fig. 31b). Published records: ROM (Burckhardt and Lauterer 1989). Material examined: ROM.

Genus *Rhinocola* Foerster, 1848

***Rhinocola aceris* (Linnaeus, 1758)**

Diagnosis: Adult (Fig. 32a) and fifth-instar immature. Ossiannilsson (1992).

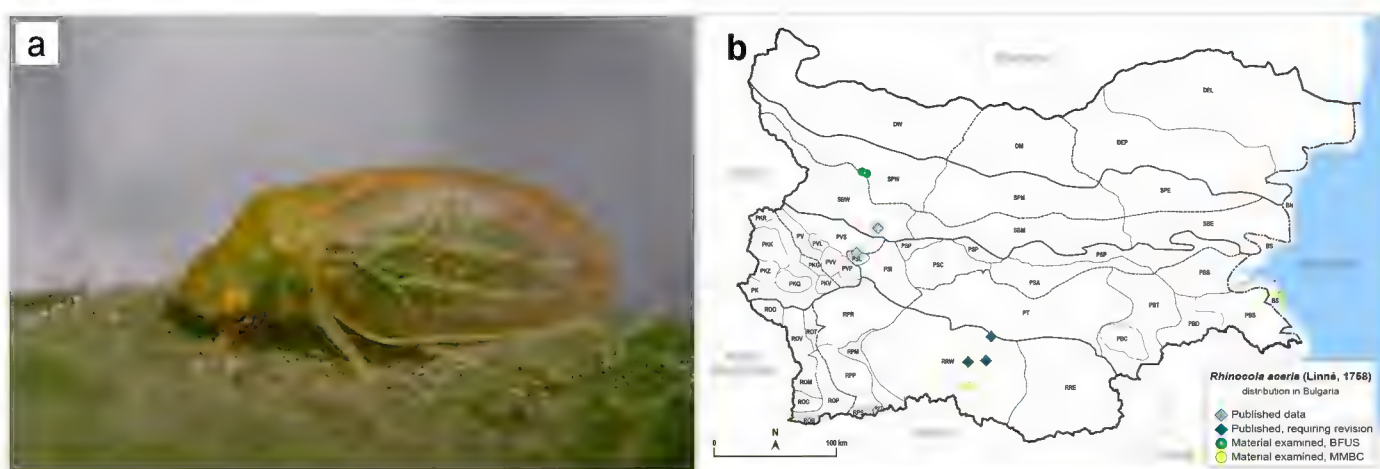


Figure 32.

Rhinocola aceris (Linnaeus, 1758).

a: *Rhinocola aceris*, adult male;

b: Distribution of *Rhinocola aceris* in Bulgaria. doi:

Feeds on: Adults were collected on *Acer* sp. in Bulgaria (Głowacka and Harizanov 1983, Pramatarova et al. 2024); *Acer* spp. are confirmed host plants (Ossiannilsson 1992).

Distribution: General distribution. Europe, Caucasus, Middle East. **Distribution in Bulgaria** (Fig. 32b). Published records: Bulgaria, without locality data (Gegechkori and Loginova 1990); PSL, RRW, SBW (Harizanov and Lauterer 1968, Głowacka and Harizanov 1983, Pramatarova et al. 2024). Material examined: BS, PSL, RRW, SBW, SPW.

Family Calophyidae Vondráček, 1957

Subfamily Calophyinae Vondráček, 1957

Genus *Calophya* Löw, 1879

Calophya rhois (Löw, 1877)

Diagnosis: Adult (Fig. 33a). Vondráček (1957a), Hodkinson and White (1979). **Fifth-instar immature.** Loginova (1968), White and Hodkinson (1982).

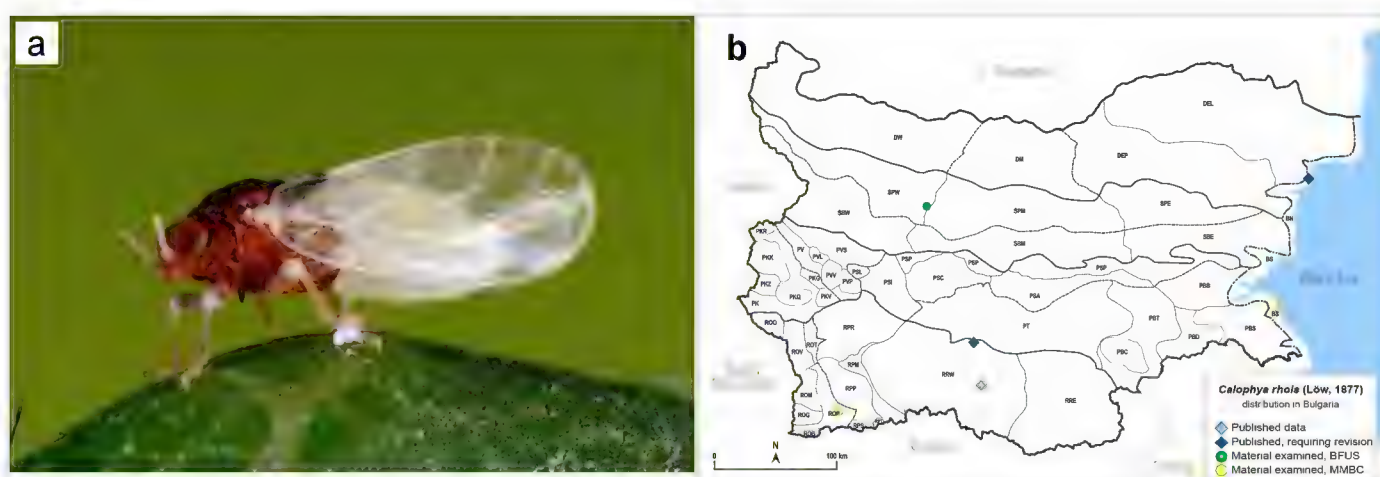


Figure 33.

Calophya rhois (Löw, 1877).

a: *Calophya rhois*, adult male; [doi](#)

b: Distribution of *Calophya rhois* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, adults and immatures were collected on *Cotinus coggygia* Scop. (Klimaszewski 1964, Harizanov and Lauterer 1968, our data), which is the confirmed host plant (Burckhardt and Basset 2000, Burckhardt and Mühlethaler 2003).

Distribution: General distribution. Europe, Turkey, Caucasus, China. **Distribution in Bulgaria** (Fig. 33b). Published records: BN, RRW (Klimaszewski 1964, Harizanov and Lauterer 1968). Material examined: BS, ROP, RRW, SPW.

Notes: *Calophya rhois* was apparently introduced into several countries of central and western Europe together with its host plant, *Cotinus coggygia*, which is often planted as an ornamental in parks and gardens (Burckhardt and Mühlethaler 2003, Mifsud et al. 2010). Burckhardt and Basset (2000) and Burckhardt and Mühlethaler (2003) hypothesised that *C. rhois* is native to East Asia and was introduced to Europe and the Caucasus. However, *Cotinus coggygia* has a very wide range extending from the southern parts of Central Europe to central and southern China and is also considered native to the Bulgarian flora (Assyov et al. 2012, POWO 2024). *Calophya rhois* is common in southern Europe and has been listed amongst the native species of psyllids in Italy (Conci et al. 1996), Slovenia (Seljak 2020) and north-eastern

Turkey (Burckhardt 1988). Therefore, it is possible that *C. rhois* is an autochthonous species occurring spontaneously in natural habitats at least in the southern parts of Bulgaria. On the other hand, *C. cogyggria* is also often planted as an ornamental plant in Bulgaria. Our record from SPW was made along a road near an agricultural field, where *C. cogyggria* and *C. rhois* were apparently introduced.

Family Carsidaridae Crawford, 1911

Subfamily Homotominae Heslop-Harrison, 1958

Genus *Homotoma* Guérin-Ménéville, 1844

Homotoma ficus (Linnaeus, 1758)

Diagnosis: Adult (Fig. 34b). Loginova (1964), Tamanini (1965), Jerinić-Prodanović (2011). **Fifth-instar immature**. Rapisarda (1989), as *H. viridis*; Jerinić-Prodanović (2011).

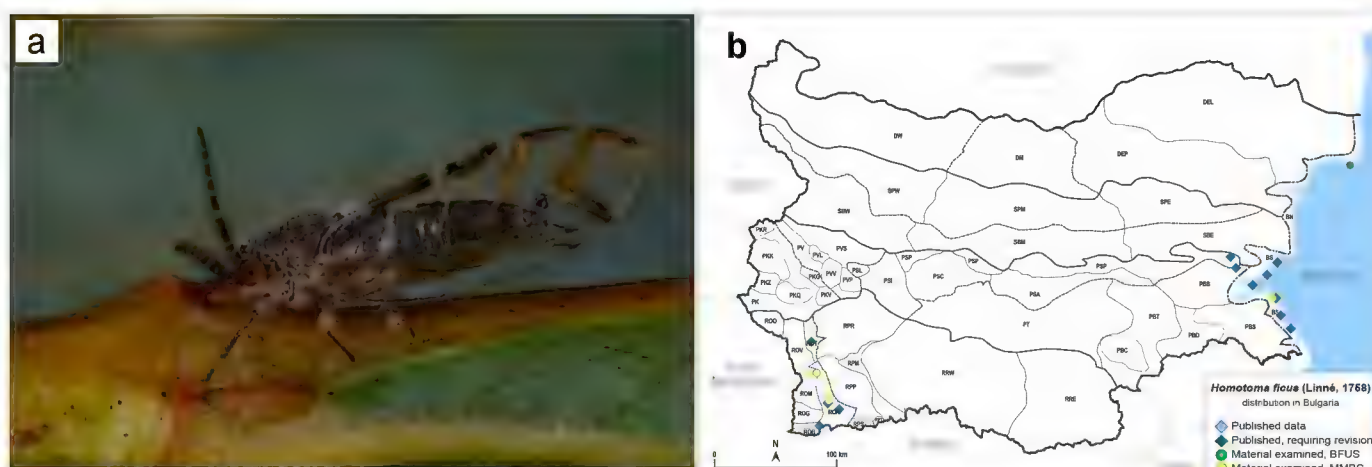


Figure 34.

Homotoma ficus (Linnaeus, 1758).

a: *Homotoma ficus*, adult male; [doi](#)

b: Distribution of *Homotoma ficus* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, Klimaszewski (1961b), Harizanov (1963) and we collected adults and immatures on *Ficus carica* L., which is a confirmed host plant (Rapisarda 1989, Burckhardt 1989, Jerinić-Prodanović 2011).

Distribution: General distribution. Native to Mediterranean parts of Europe, North Africa, Ukraine, Caucasus, Middle East and Iran; alien in Great Britain, Central and south-eastern Europe, Serbia and USA. **Distribution in Bulgaria** (Fig. 34b). Published records: BS, PBB, PSP, ROP, ROT (Klimaszewski 1961b, Tsalev 1961, Harizanov 1963, Głowacka 1989). Material examined: BN, BS, ROM, ROP.

Genus *Psyllopsis* Löw, 1879

Psyllopsis discrepans (Flor, 1861)

Diagnosis: Adult and fifth-instar immature. Loginova (1954), Ossiannilsson (1992).

Feeds on: Oligophagous on *Fraxinus* spp. (Conci and Tamanini 1990, Ossiannilsson 1992). In Bulgaria, adults and immatures were collected on *Fraxinus* sp. (Głowacka and Harizanov 1983).

Distribution: General distribution. Europe, Caucasus, alien in North America. **Distribution in Bulgaria** (Fig. 36). Published records: BS, RRW (Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989). Material examined: PVS.

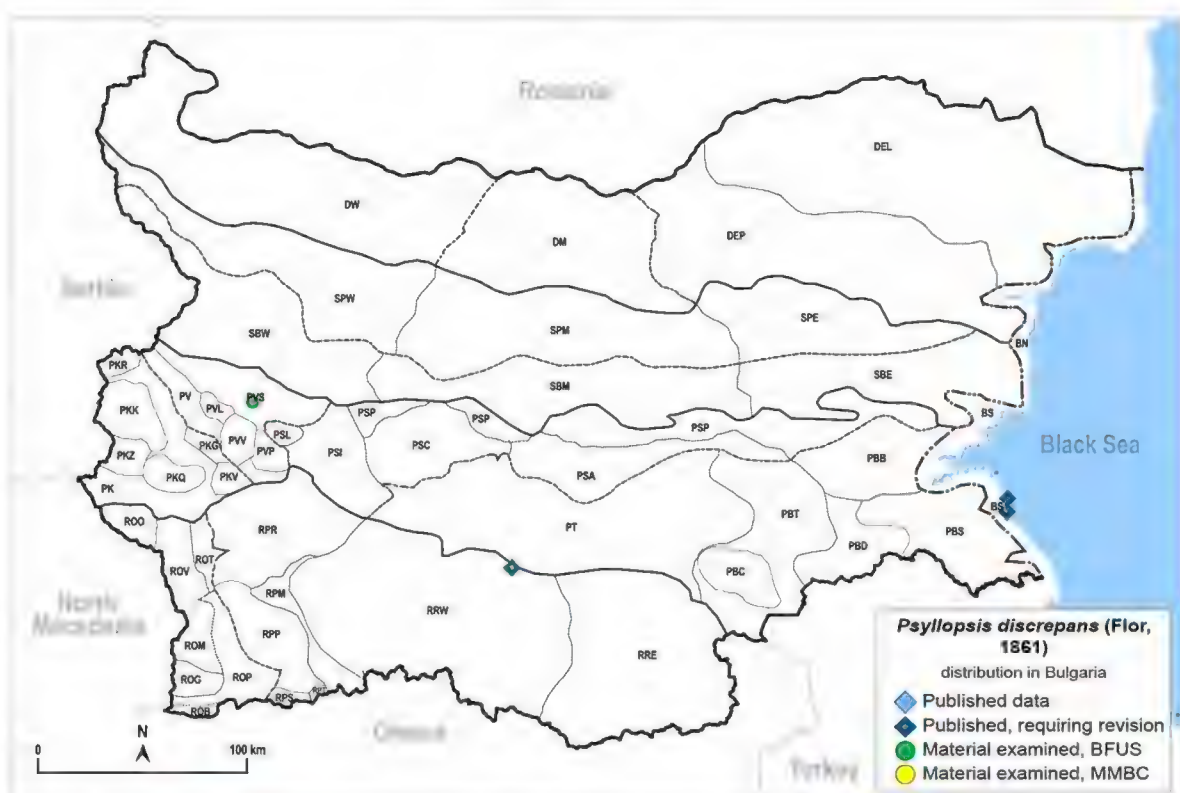


Figure 36. [doi](#)

Distribution of *Psyllopsis discrepans* (Flor, 1861) in Bulgaria.

Psyllopsis distinguenda Edwards, 1913

Diagnosis: Adult. Hodkinson and White (1979), Conci and Tamanini (1990). **Fifth-instar immature.** White and Hodkinson (1982).

Feeds on: Oligophagous on *Fraxinus angustifolia* Vahl (including subsp. *oxycarpa* (M.Bieb. ex Willd.) Franco & Rocha Afonso) and *F. excelsior* L. (Conci and Tamanini 1990). In Bulgaria, we collected adults on *Fraxinus* sp.

Distribution: General distribution. Europe, Caucasus. **Distribution in Bulgaria** (Fig. 37). Material examined: DW.

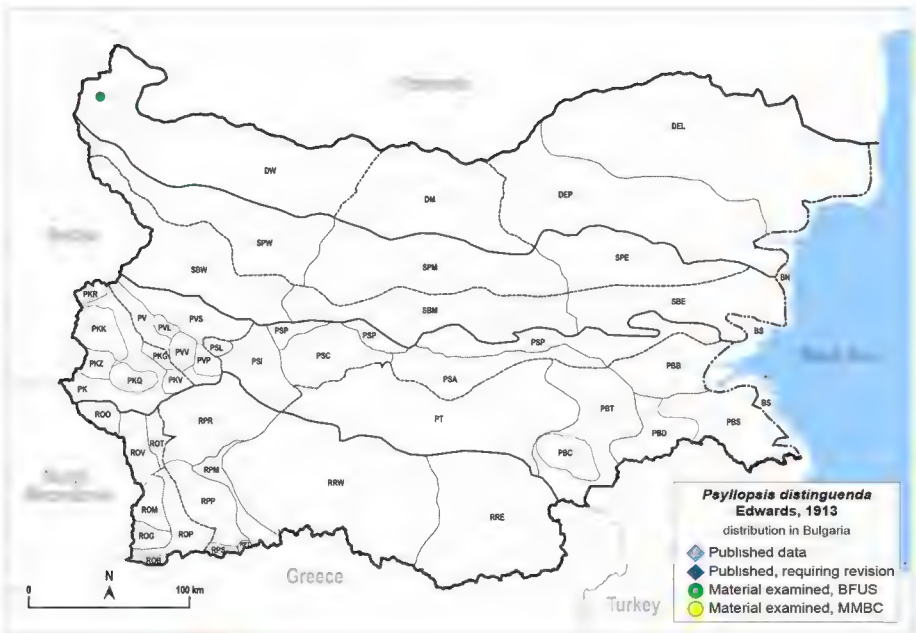


Figure 37. [doi](#)
Distribution of *Psyllopsis distinguenda* Edwards, 1913 in Bulgaria.

Notes: New record for Bulgaria.

Psyllopsis dobreanuae Loginova, 1971

Diagnosis: Adult (Fig. 38a). Dobreanu and Manolache (1962), as *P. meliphila*; Loginova (1971), Conci and Tamanini (1990). **Fifth-instar immature** (Fig. 38b).

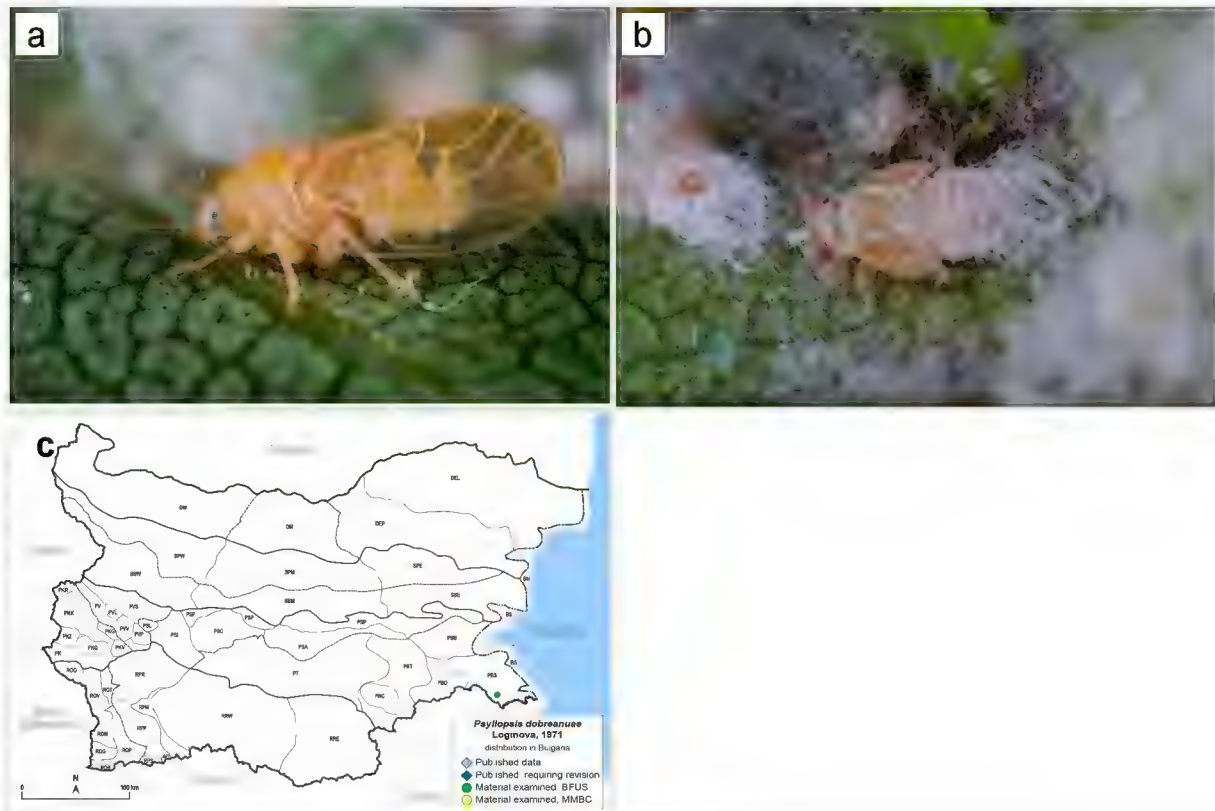


Figure 38.
Psyllopsis dobreanuae Loginova, 1971.
a: *Psyllopsis dobreanuae*, adult male; [doi](#)
b: *Psyllopsis dobreanuae*, fifth instar immature; [doi](#)
c: Distribution of *Psyllopsis dobreanuae* in Bulgaria. [doi](#)

Feeds on: The only known host plant so far is *Fraxinus excelsior* L. (Dobreanu and Manolache 1962, Conci and Tamanini 1990). In Bulgaria, we collected adults and immatures on *Fraxinus* sp.

Distribution: General distribution. Romania, North Macedonia, Moldova (Loginova 1971, Malenovský and Jerinić-Prodanović 2011). **Distribution in Bulgaria** (Fig. 38c). Material examined: PBS.

Notes: New record for Bulgaria.

Psyllopsis fraxini (Linnaeus, 1758)

Diagnosis: Adult (Fig. 39a). Conci and Tamanini (1990), Ossiannilsson (1992). **Fifth-instar immature.** Ossiannilsson (1992), White and Hodkinson (1982).

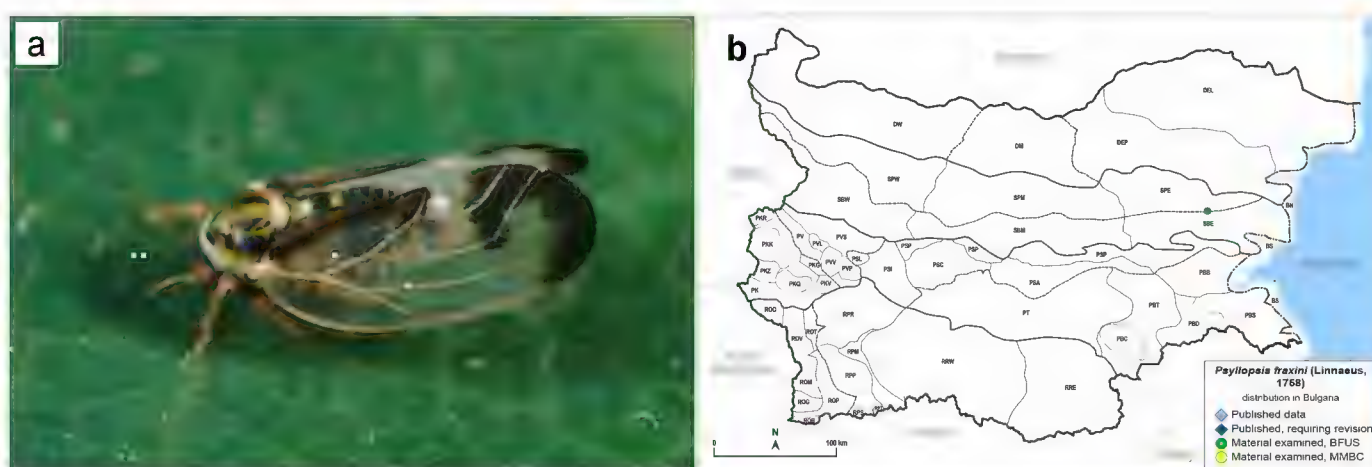


Figure 39.

Psyllopsis fraxini (Linnaeus, 1758).

a: *Psyllopsis fraxini*, adult female; [doi](#)

b: Distribution of *Psyllopsis fraxini* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Fraxinus* spp. (Conci and Tamanini 1990), on which we also collected adults in Bulgaria.

Distribution: General distribution. Europe (Conci and Tamanini 1990), alien in Australia, New Zealand and North America. **Distribution in Bulgaria** (Fig. 39b). Material examined: SPE.

Notes: New record for Bulgaria.

Psyllopsis fraxinicola (Foerster, 1848)

Diagnosis: Adult and fifth-instar immature. Conci and Tamanini (1990), Ossiannilsson (1992).

Feeds on: Oligophagous on *Fraxinus* spp. (Conci and Tamanini 1990). In Bulgaria, adults and immatures were collected on *Fraxinus excelsior* L. (Głowacka and Harizanov 1983, our data).

Distribution: Europe, North Africa, Caucasus, Middle East, Kazakhstan; alien in Australia, New Zealand, North and South America. **Distribution in Bulgaria** (Fig. 40). Published records: RRW, PVS (Głowacka and Harizanov 1983, Pramatarova et al. 2023). Material examined: BS, DM, PSC, PVS, ROM, RPR, RRE.

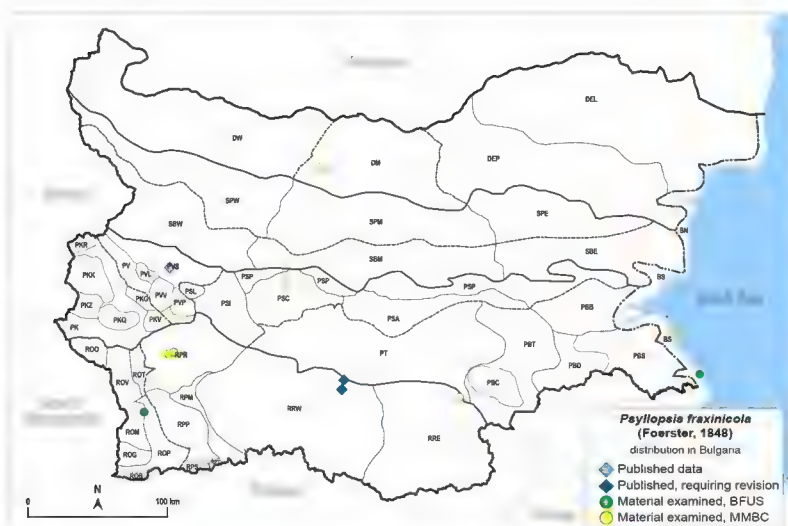


Figure 40. [doi](#)

Distribution of *Psyllopsis fraxinicola* (Foerster, 1848) in Bulgaria.

Psyllopsis machinosa Loginova, 1963

Diagnosis: Adult. Loginova (1963b).

Feeds on: The known host plants are *Fraxinus angustifolia* subsp. *oxycarpa* (M.Bieb. ex Willd.) Franco & Rocha Afonso (Gegechkori and Loginova 1990) and *F. a.* subsp. *syriaca* (Boiss.) Yalt. (Spodek et al. 2017). In Bulgaria, adults were collected on *Fraxinus excelsior* L. (Lauterer 1993), which is another probable host plant species.

Distribution: General distribution. South-eastern Europe, Middle East, Central Asia. **Distribution in Bulgaria** (Fig. 41). Published records: PSP (Lauterer 1993). Material examined: BS, PSP.

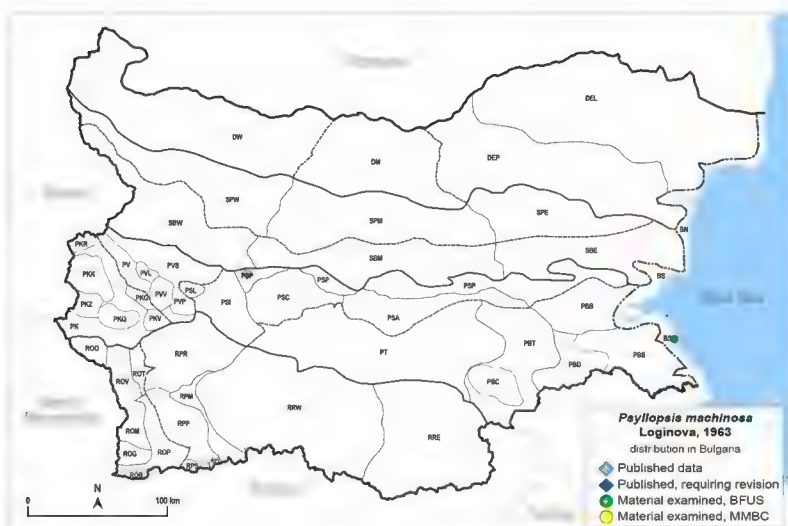


Figure 41. [doi](#)

Distribution of *Psyllopsis machinosa* Loginova, 1963 in Bulgaria.

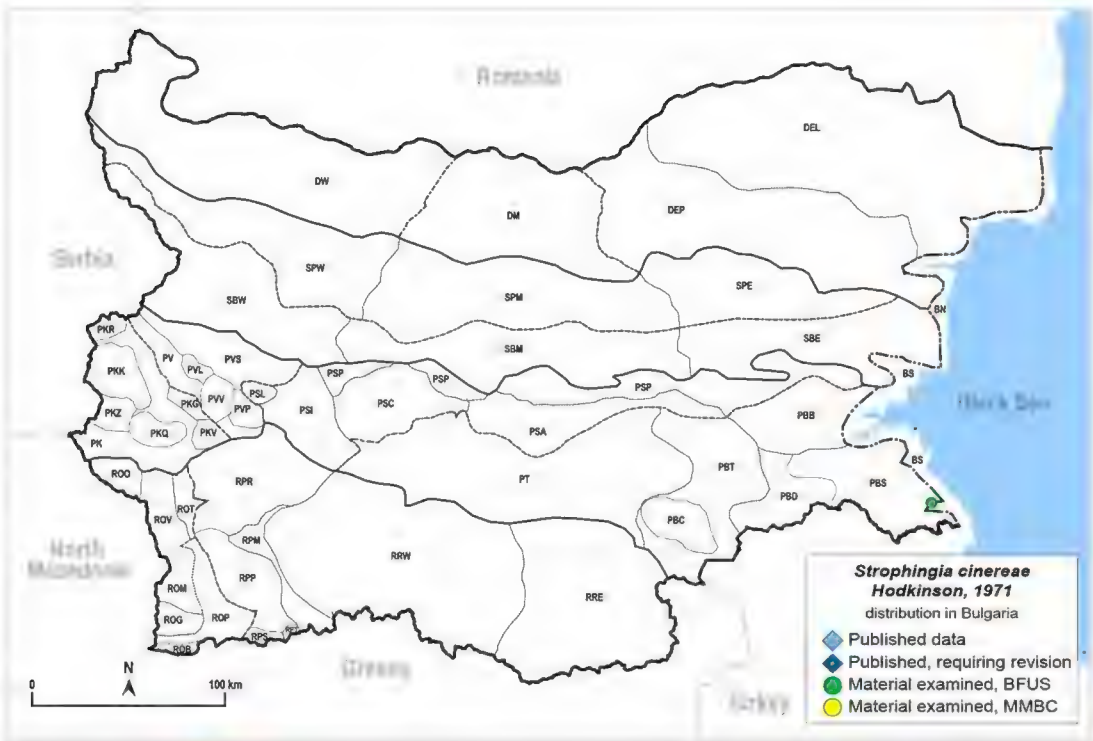


Figure 43. [doi](#)
Distribution of *Strophingia cinereae* Hodkinson, 1971 in Bulgaria.

Notes: New record for Bulgaria. *Strophingia cinereae* has so far only been collected in the Strandzha Mountains near the Black Sea coast in the south-eastern part of the country in a habitat of nature conservation importance 'Strandzha heaths of tree heather (*Erica arborea*) and common heather (*Calluna vulgaris*)' (Gussev 2015).

***Strophingia ericae* (Curtis, 1835)**

Diagnosis: Adult (Fig. 44a) and fifth-instar immature. Hodkinson (1981), Ossiannilsson (1992).

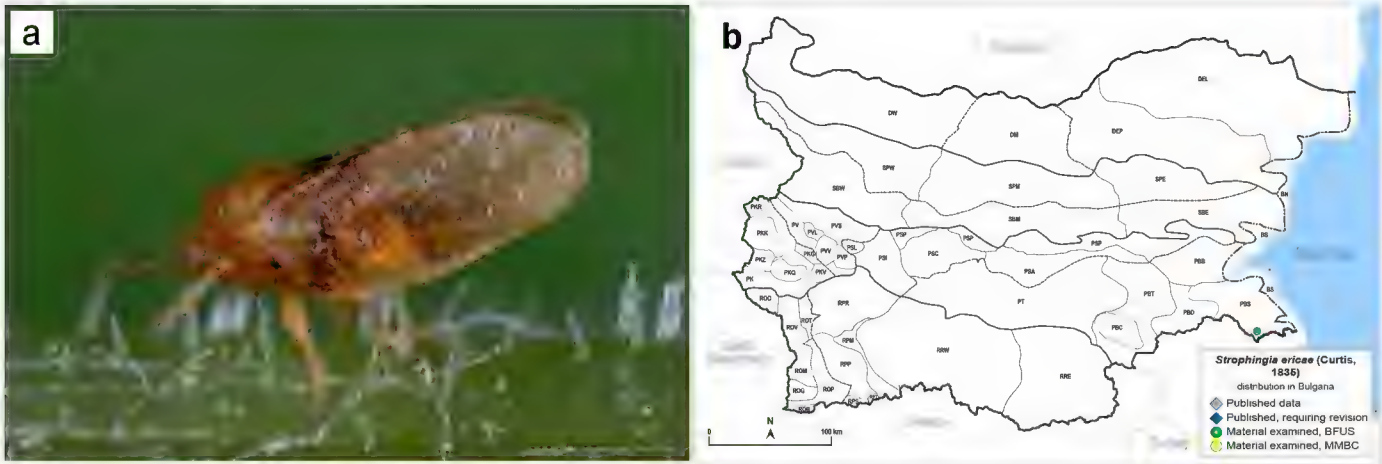


Figure 44.
Strophingia ericae (Curtis, 1835).
a: *Strophingia ericae*, adult female; [doi](#)
b: Distribution of *Strophingia ericae* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, we collected adults on *Calluna vulgaris* (L.) Hull., which is a confirmed host plant (Hodkinson 1981).

Distribution: General distribution. Europe. **Distribution in Bulgaria** (Fig. 44b). Material examined: PBS.

Notes: New record for Bulgaria. *Strophingia ericae* is widespread in western, northern and central Europe (Lauterer 1976, Hodkinson 1981, Ossiannilsson 1992, Serbina et al. 2020, Seljak 2020). In Bulgaria, however, it is restricted to the Strandzha Mountains in the south-east of the country, the only region in the country where its host plant, *Calluna vulgaris*, occurs (Assyov et al. 2012). The Strandzha heaths are a habitat of conservation importance (Gusseff 2015), where *Calluna vulgaris* occurs together with *Erica arborea*, the host plant of *Strophingia cinerea*, which has also been recorded there (see above).

Subfamily Liviinae Löw, 1879

Genus *Aphorma* Hodkinson, 1974

Aphorma lichenoides (Puton, 1898)

Diagnosis: Adult. Conci et al. (1983). **Fifth-instar immature.** Burckhardt and Mifsud (2003).

Distribution: General distribution. Great Britain, southern parts of Europe, North Africa, Turkey. **Distribution in Bulgaria** (Fig. 45). Material examined: PBS.

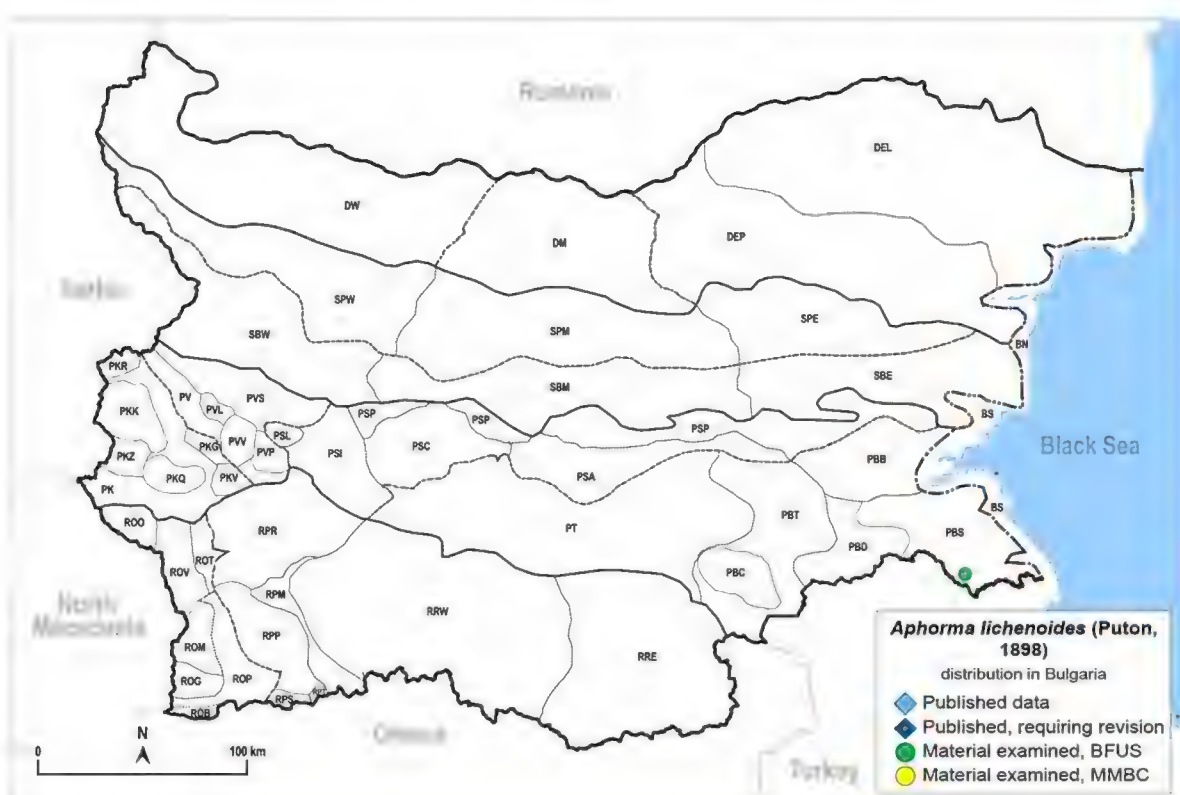


Figure 45. [doi](#)

Distribution of *Aphorma lichenoides* (Puton, 1898) in Bulgaria.

Notes: New record for Bulgaria.

Genus *Camarotoscena* Haupt, 1935

Camarotoscena speciosa (Flor, 1861)

Diagnosis: Adult (Fig. 46a) and fifth-instar immature. Ossiannilsson (1992).

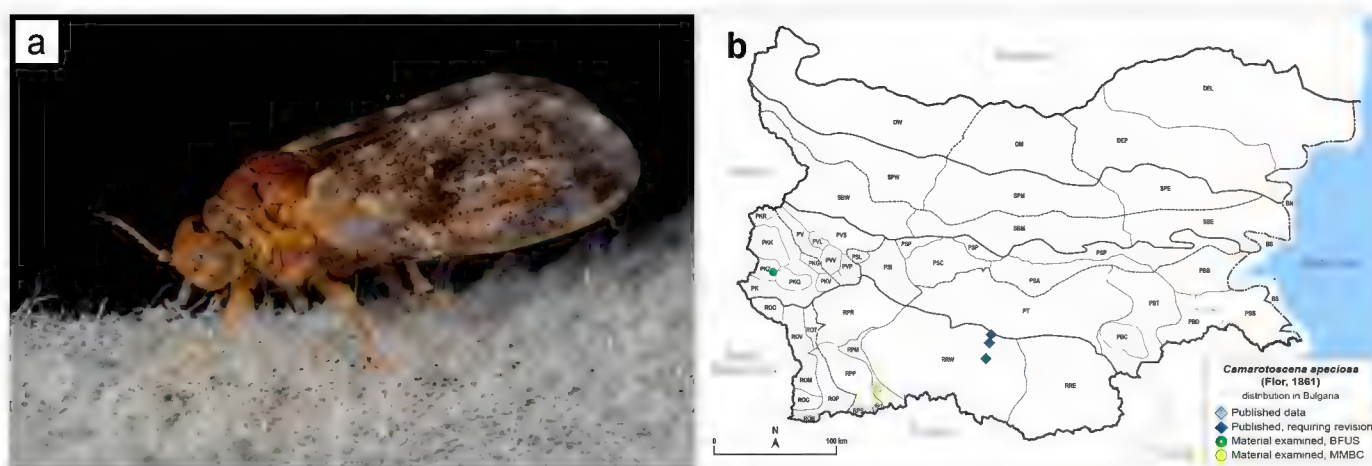


Figure 46.

Camarotoscena speciosa (Flor, 1861).

a: *Camarotoscena speciosa*, adult; [doi](#)

b: Distribution of *Camarotoscena speciosa* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Populus* spp. (Burckhardt et al. 2023). In Bulgaria, we collected adults on *Populus nigra* L., which is one of the confirmed host plants.

Distribution: General distribution. Europe, Caucasus, Middle East, Central Asia, China, Mongolia. **Distribution in Bulgaria** (Fig. 46b). Published records: RRW (Głowacka and Harizanov 1983). Material examined: PKZ, RPM.

Camarotoscena subrubescens (Flor, 1861)

Diagnosis: Adult. Loginova (1975).

Feeds on: In Bulgaria, adults were collected on *Populus nigra* L. by P. Lauterer. This is one of the confirmed host plants (Burckhardt et al. 2023).

Distribution: General distribution. Southern Europe, Turkey. **Distribution in Bulgaria** (Fig. 47). Material examined: ROM, ROP.

Notes: New record for Bulgaria.

Genus *Livia* Latreille, 1802

Livia junci (Schrank, 1789)

Diagnosis: Adult (Fig. 48a) and fifth-instar immature. Ossiannilsson (1992), as *L. juncorum*; Hodkinson and Bird (2000).

Feeds on: Collected on *Juncus* sp. in Bulgaria (Głowacka and Harizanov 1983, Głowacka 1989). Oligophagous on a number of *Juncus* spp. (Hodkinson and Bird 2000).

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 48b). Published records: BS, PBT, PVS, PVV, ROP, RRW (Joakimov 1909, Vondráček 1953, Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989, Pramatarova et al. 2023). Material examined: BS, PVV, ROM, ROP, RPM, RPR, RRE, SBE, SBM, SBW, SPE.

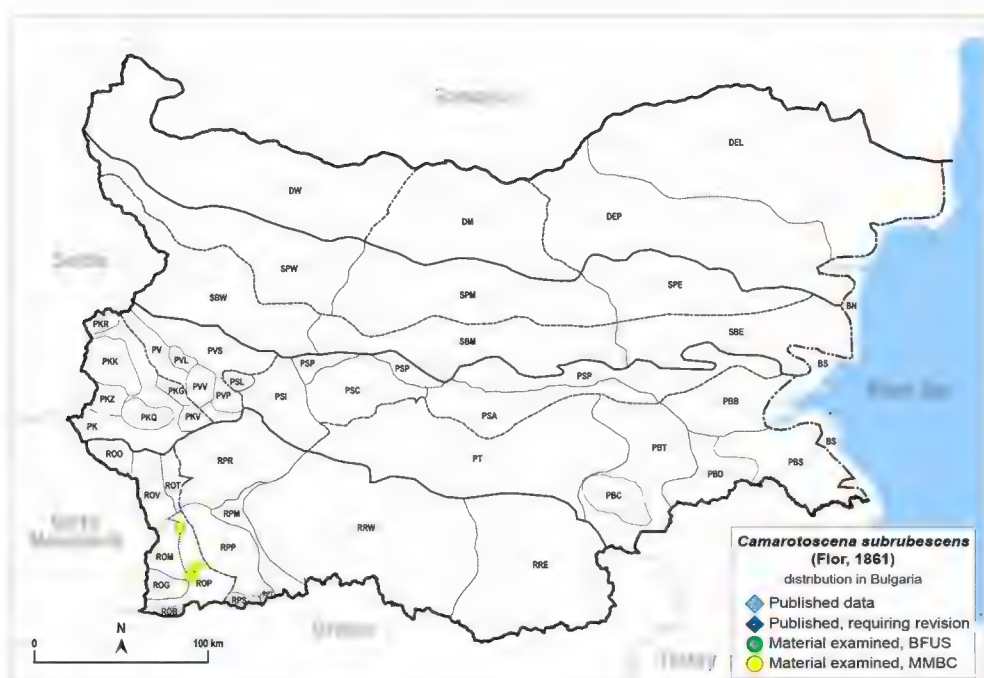


Figure 47. [doi](#)

Distribution of *Camarotoscena subrubescens* (Flor, 1861). in Bulgaria.

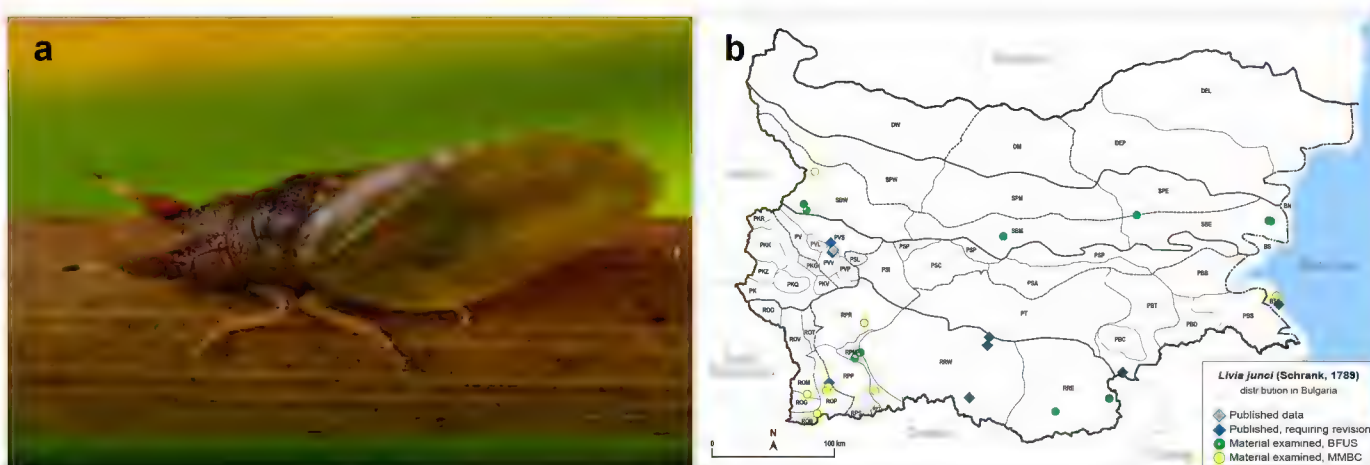


Figure 48.

Livia junci (Schränk, 1789).

a: *Livia junci*, adult female; [doi](#)

b: Distribution of *Livia junci* in Bulgaria. [doi](#)

Livia mediterranea Loginova, 1974

Diagnosis: Adult. Loginova (1974a), Hodkinson and Bird (2000).

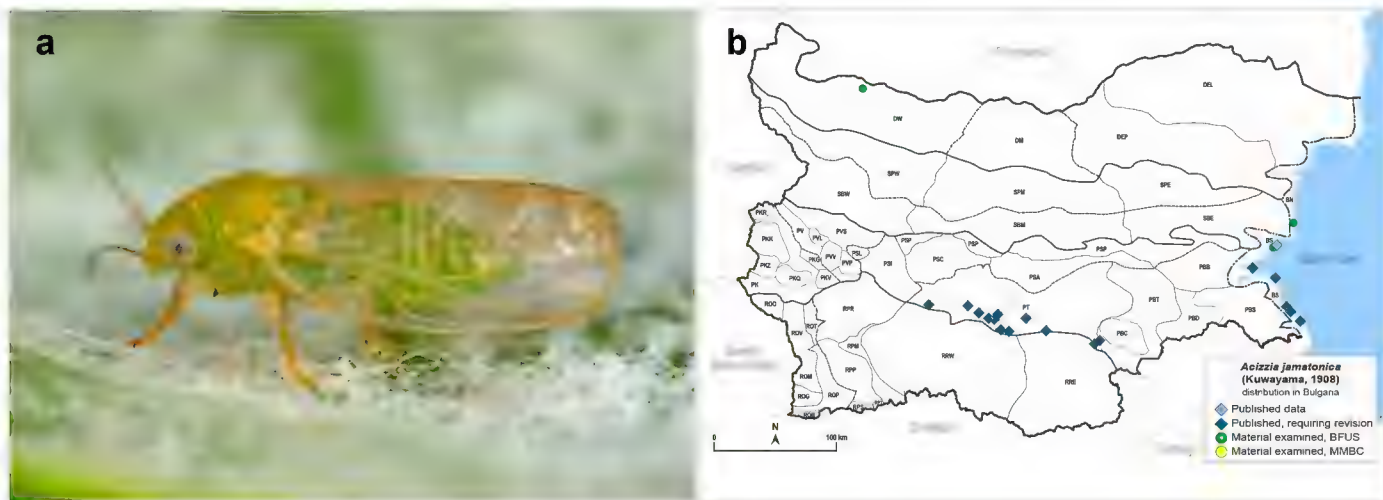


Figure 50.

Acizzia jamatonica (Kuwayama, 1908).

a: *Acizzia jamatonica*, adult male; [doi](#)

b: Distribution of *Acizzia jamatonica* in Bulgaria. [doi](#)

Notes: *Acizzia jamatonica* is now widespread and causing cosmetic damage on *Albizia julibrissin*, planted as an ornamental in parks and private gardens in southern Bulgaria and along the Black Sea coast (Harizanova et al. 2012). The first evidence of this alien psyllid species in Bulgaria dates back to 2009 (Vétek and Rédei 2009).

Subfamily Diaphorininae Vondráček, 1951

Genus *Diaphorina* Löw, 1880

Diaphorina lycii Loginova, 1978

Diagnosis: Adult (Fig. 51a). Loginova (1978), Burckhardt (1984). **Fifth-instar immature.** Burckhardt (1984).

Feeds on: Oligophagous on several *Lycium* spp. (Burckhardt 1984). In Bulgaria, numerous adults were collected on *Lycium barbarum* L. (= *L. halimifolium* Mill.) (Loginova 1978, Nakabachi et al. 2020), which is one of the confirmed host plants.

Distribution: General distribution. Southern Europe, North Africa, Caucasus, Middle East, Central Asia, Mongolia. **Distribution in Bulgaria** (Fig. 51b). Published records: BN, BS, PSA, RRW (Loginova 1978, Nakabachi et al. 2020, Pramatarova et al. 2021). Material examined: BN, BS, PSA, RRW.

Notes: The type locality of *D. lycii* is in Turkmenistan (Burckhardt 1984). Paratypes from four localities in Bulgaria (collected by P. Lauterer and A. Merta, MMBC) were listed in the species description by Loginova (1978). In Bulgaria, *D. lycii* is monophagous on *Lycium barbarum*, which was imported to Bulgaria as an ornamental shrub, cultivated in parks and gardens for hedges, naturalised in 1900 and has since spread and become invasive in many parts of the

country (Petrova et al. 2013). *Diaphorina lycii* should also be considered as an alien species in the Bulgarian fauna. The oldest documented specimens from Bulgaria were collected in 1973 (Loginova 1978).

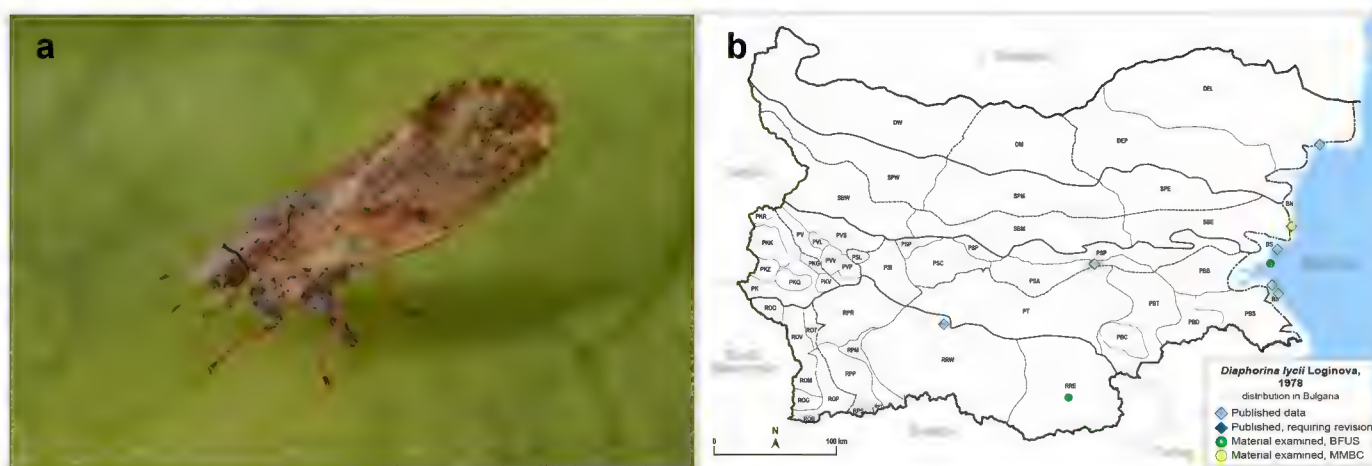


Figure 51.

Diaphorina lycii Loginova, 1978.

a: *Diaphorina lycii*, adult female; [doi](#)

b: Distribution of *Diaphorina lycii* in Bulgaria. [doi](#)

Subfamily Psyllinae Latreille, 1807

Genus *Arytaina* Foerster, 1848

Arytaina genistae (Latreille, 1804)

Diagnosis: Adult and fifth-instar immature. Hodkinson and Hollis (1987), Ossiannilsson (1992).

Distribution: General distribution. Europe, alien in North America. **Distribution in Bulgaria** (Fig. 52). Published records: RRW (Klimaszewski 1965, Głowacka and Harizanov 1983).

Notes: *Arytaina genistae* is particularly widespread in the western parts of Europe. The only records for Bulgaria were published by Klimaszewski (1965) from the western Rhodope Mountains. These specimens should be re-examined to exclude the possibility that they do not belong to the similar *A. maculata*, which is common in the south-western part of the country.

Arytaina maculata (Löw, 1886)

Diagnosis: Adult (Fig. 53a). Hodkinson and Hollis (1987). **Fifth-instar immature.** Loginova (1976).

Feeds on: *Arytaina maculata* is narrowly oligophagous on *Chamaecytisus* spp., a taxonomically difficult group in the Balkans. *Arytaina maculata* was recorded by

Klimaszewski (1970) on *Ch. ratibonensis* (Schaeff.) Rotm. from Bulgaria (Yakoruda), by Andrianova and Klimaszewski (1983) on *Ch. borysthenicus* (Gruner) from south-western Russia, by Conci et al. (1993) from Italy on *Ch. spinescens* Rothm. and by Malenovský et al. (2011) on *Ch. austriacus* (L.) Link from Czechia. We collected many adult and immature specimens of *A. maculata* in south-western Bulgaria on *Chamaecytisus austriacus* subsp. *stefanoffii* (Stoj.) Kuzmanov and many adults also on *Chamaecytisus eriocarpus* (Boiss.) Rothm. - the former is thus a newly-confirmed and the latter a probable host plant.

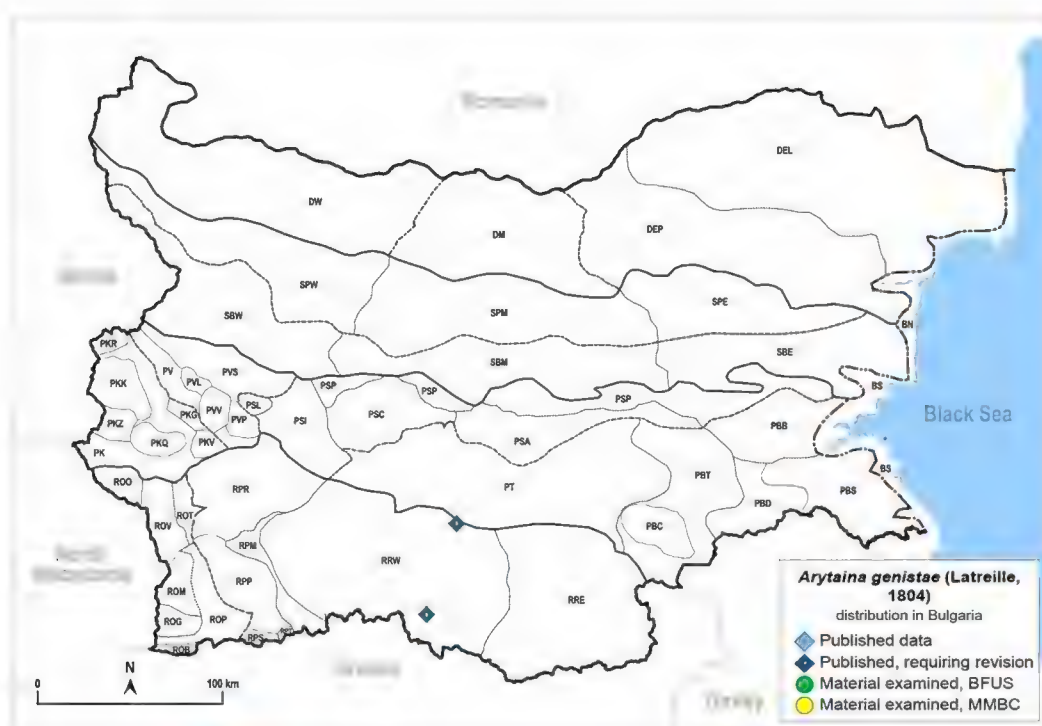


Figure 52. [doi](#)

Distribution of *Arytaina genistae* (Latreille, 1804) in Bulgaria.

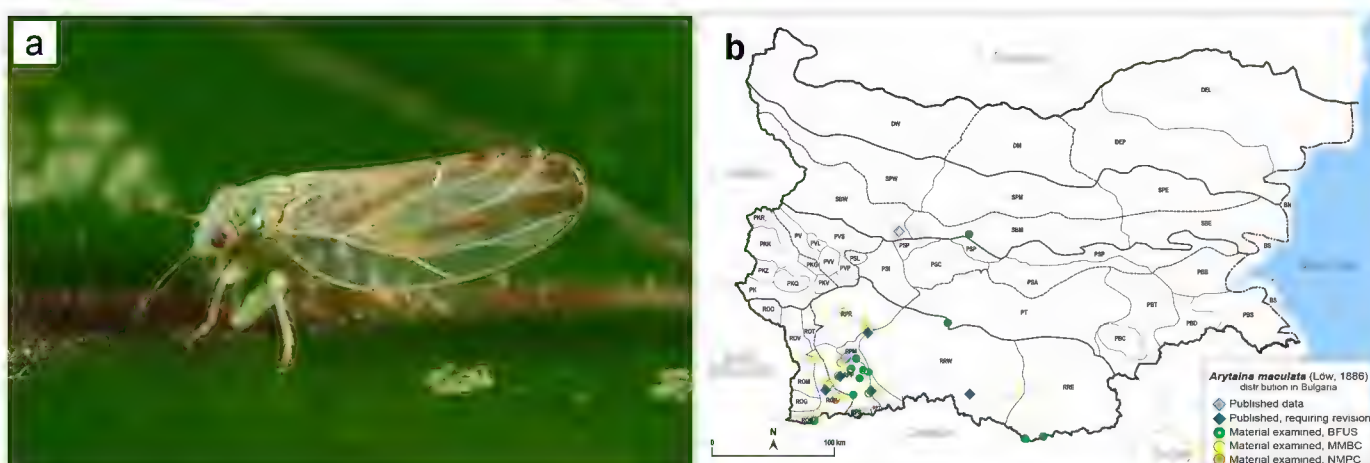


Figure 53.

Arytaina maculata (Löw, 1866).

a: *Arytaina maculata*, adult female; [doi](#)

b: Distribution of *Arytaina maculata* in Bulgaria. [doi](#)

Distribution: General distribution. Central and south-eastern Europe. **Distribution in Bulgaria** (Fig. 53b). Published records: ROP, RPM, RPP, RRW, SBW (Klimaszewski 1965, Klimaszewski 1970, Głowacka and Harizanov 1983, Głowacka

1989, Lauterer 1993, Pramatarova et al. 2021, Pramatarova et al. 2023). Material examined: ROB, ROM, ROP, RPM, RPP, RPR, RPS, RRE, RRW, SBM, SBW.

Genus *Arytainilla* Loginova, 1972

Arytainilla spartiicola (Šulc, 1907)

Diagnosis: Adult (Fig. 54a) and fifth-instar immature. Conci and Tamanini (1985a).

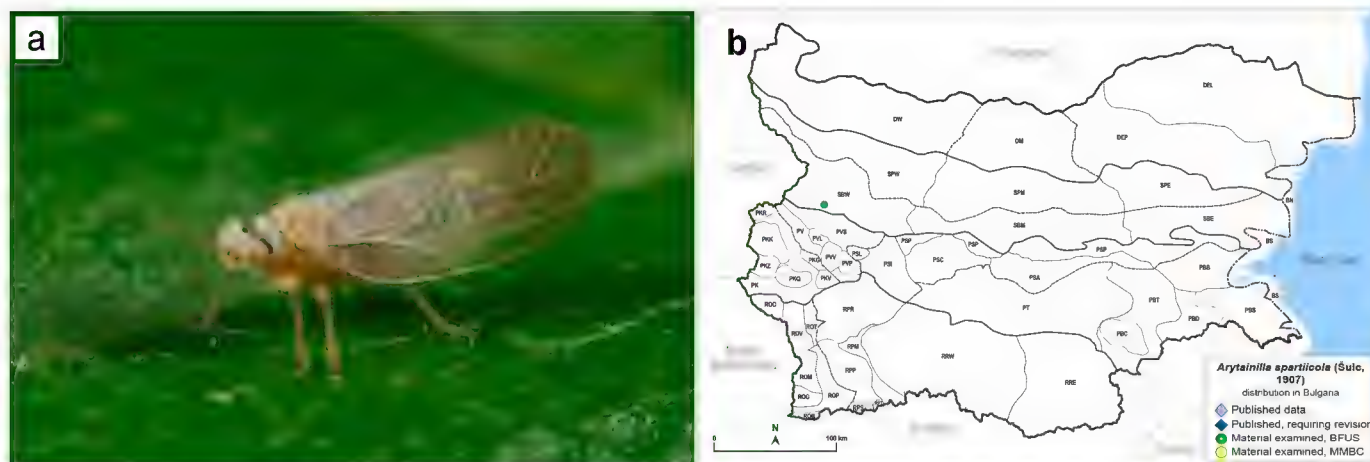


Figure 54.

Arytainilla spartiicola (Šulc, 1907).

a: *Arytainilla spartiicola*, adult female; [doi](#)

b: Distribution of *Arytainilla spartiicola* in Bulgaria. [doi](#)

Feeds on: The host plants known to date are *Cytisus scoparius* (L.) Link (Šulc 1907, Burckhardt 1983) and *C. decumbens* (Durande) Spach (Conci and Tamanini 1985a). Here, we report *Cytisus agnipilus* Velen. as a new host plant species confirmed by the presence of immatures in Bulgaria.

Distribution: General distribution. France, Germany, Switzerland, Italy. **Distribution in Bulgaria** (Fig. 54b). Material examined: SBW.

Notes: New record for Bulgaria and the Balkan Peninsula. *Arytainilla spartiicola* is a rare species, previously known only from a few localities in Europe (Šulc 1907, Burckhardt 1983, Conci and Tamanini 1985a).

Genus *Cacopsylla* Ossiannilsson, 1970

Cacopsylla abdominalis (Meyer-Dür, 1871)

Diagnosis: Adult (Fig. 55a). Loginova (1967), Lauterer and Burckhardt (1997).

Distribution: General distribution. Europe, Caucasus, Central Asia, Mongolia, Russian Far East, South Korea (Cho et al. 2020). **Distribution in Bulgaria** (Fig. 55b). Material examined: PBS, RPM, RPP, RPR.

Notes: New record for Bulgaria.

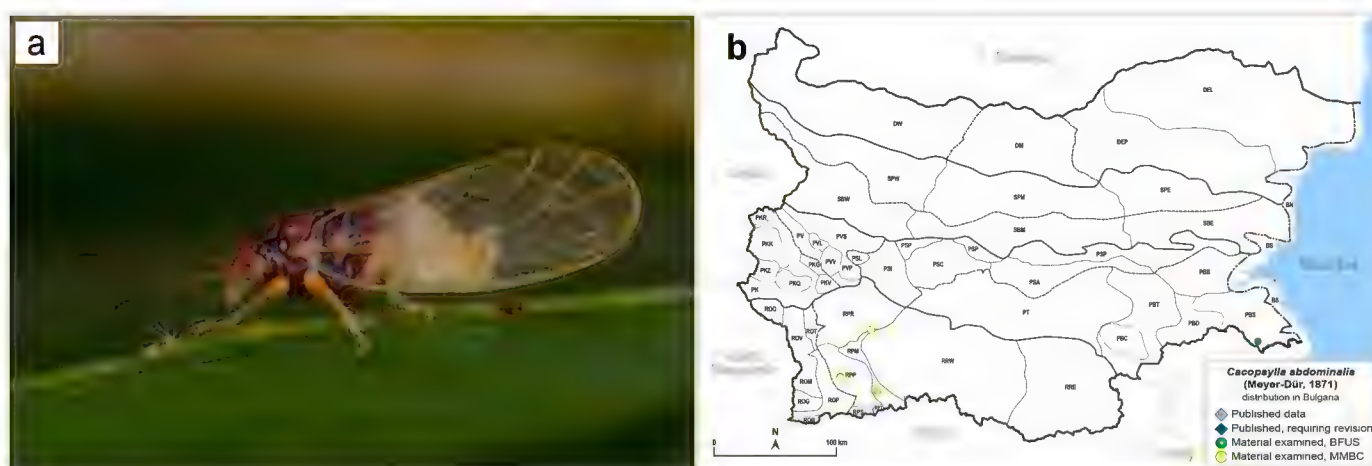


Figure 55.

Cacopsylla abdominalis (Meyer-Dür, 1871).

a: *Cacopsylla abdominalis*, adult male; [doi](#)

b: Distribution of *Cacopsylla abdominalis* in Bulgaria. [doi](#)

Cacopsylla affinis (Löw, 1880)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992), Burckhardt (2010).

Feeds on: Collected on *Crataegus* spp. in Bulgaria (Etropolska et al. 2015), which are confirmed host plants (Ossiannilsson 1992).

Distribution: General distribution. Europe, Turkey, Caucasus. **Distribution in Bulgaria** (Fig. 56). Published records: PKQ, PSL, RPP, RRW, SBM (Lauterer 1982, Głowacka and Harizanov 1983, Głowacka 1989, Etropolska et al. 2015). Material examined: PBS, PBT, PSI, PT, PVV, RPM, RPP, RPR, RRE, RRW, SBE, SBM, SBW.

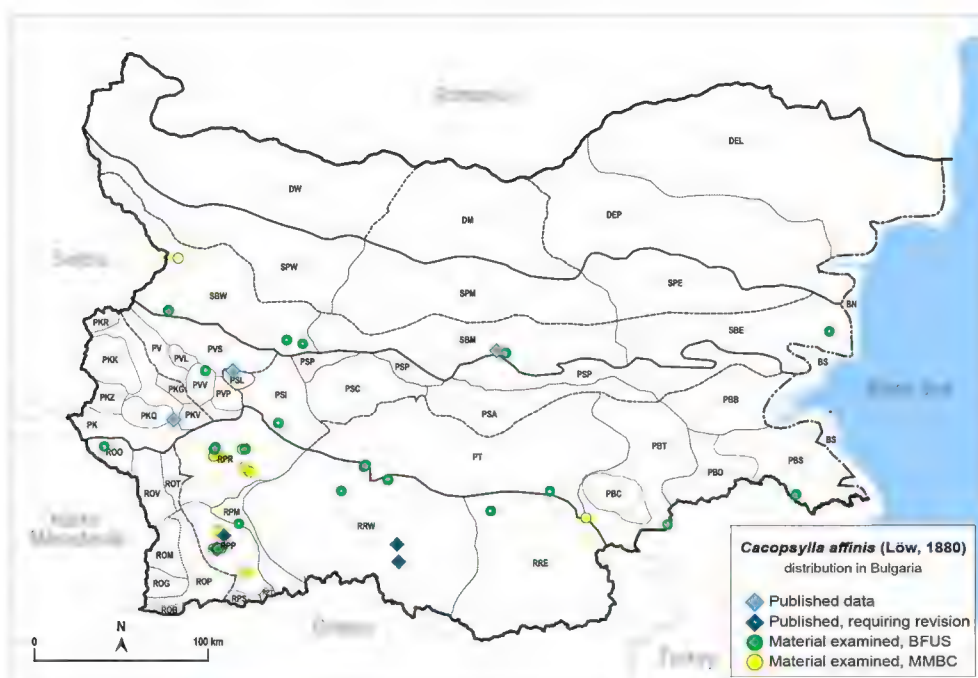


Figure 56. [doi](#)

Distribution of *Cacopsylla affinis* (Löw, 1880) in Bulgaria.

al. 2017b). In Bulgaria, adults were collected on *P. communis* by Głowacka (1989) and Etropolska et al. (2015) and on *P. spinosa* Forrsk. by us; the latter is also a probable host.

Distribution: General distribution. Central and southern Europe, North Africa, Middle East, Central Asia, India, Mongolia, China; alien in South America.
Distribution in Bulgaria (Fig. 59). Published records: PK, PKQ, PSA, PSL, ROP (Głowacka 1989, Etropolska et al. 2015, Pramatarova et al. 2023). Material examined: BN, DEL, PBS, PSA, ROM, ROV.

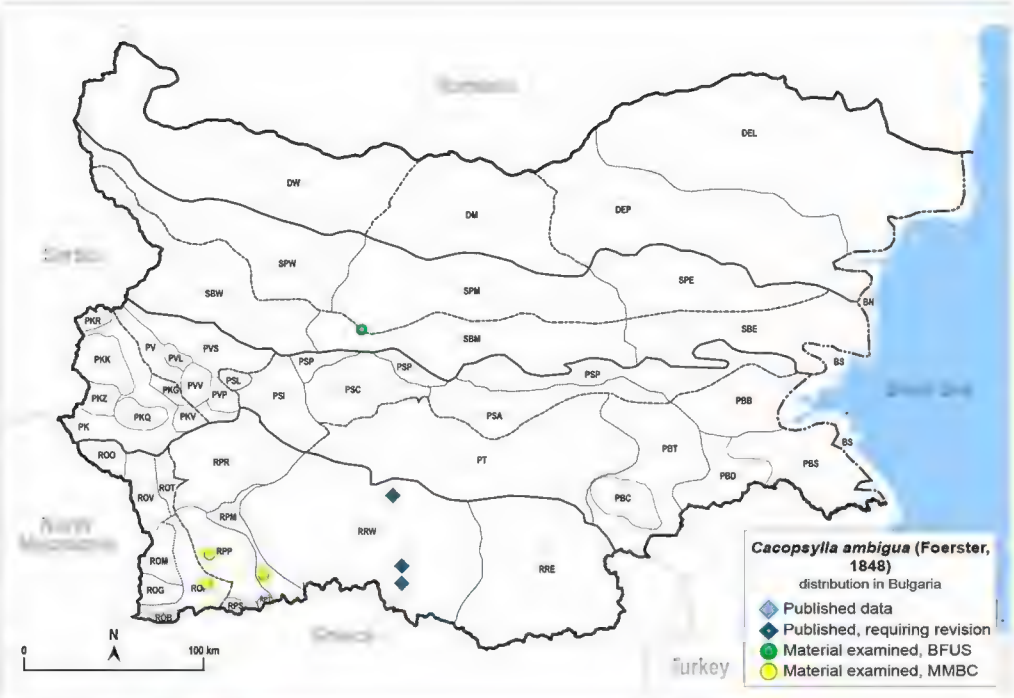


Figure 58. [doi](#)
Distribution of *Cacopsylla ambigua* (Foerster, 1848) in Bulgaria.

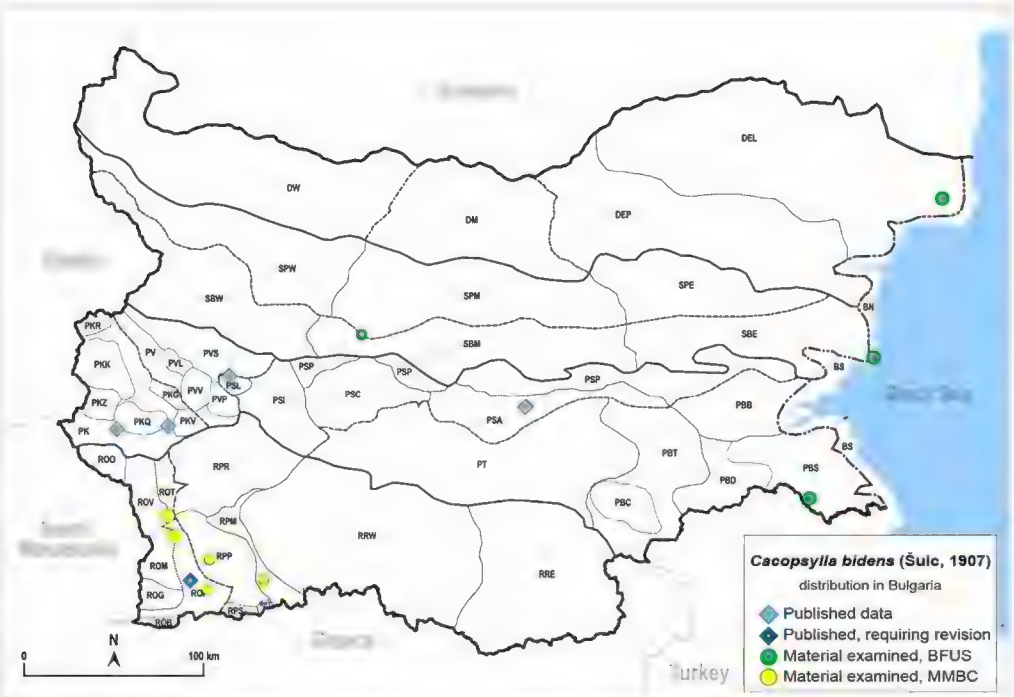


Figure 59. [doi](#)
Distribution of *Cacopsylla bidens* (Šulc, 1907) in Bulgaria.

Distribution: General distribution. Central and northern Europe. **Distribution in Bulgaria** (Fig. 62). Published records: RPP, RRW (Głowacka and Harizanov 1983, Głowacka 1989). Material examined: RPR.

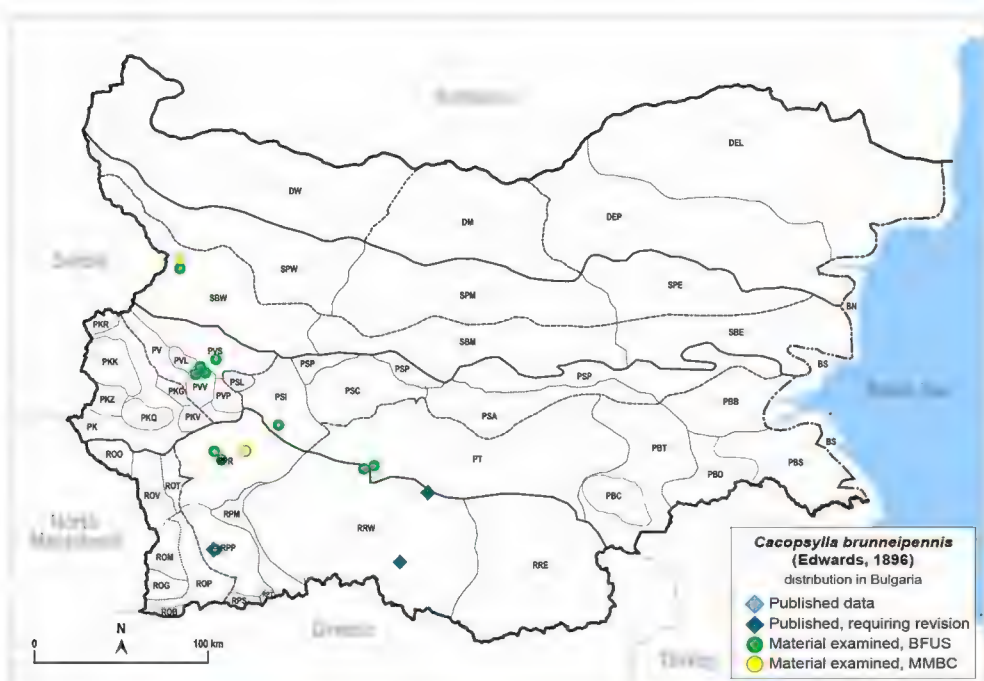


Figure 61. [doi](#)

Distribution of *Cacopsylla brunneipennis* (Edwards, 1896) in Bulgaria.

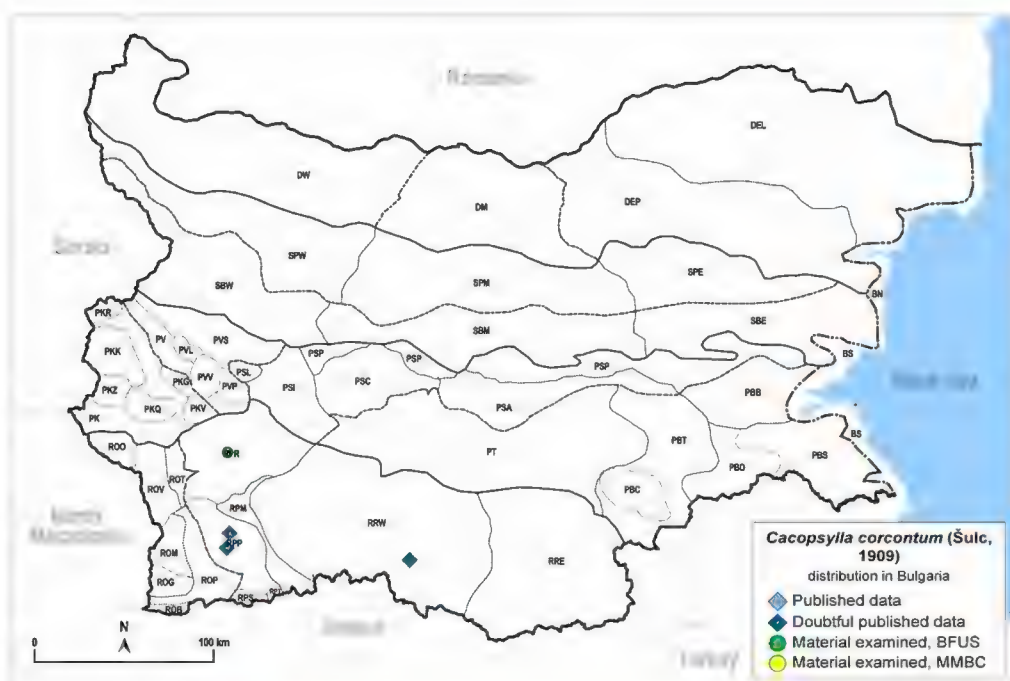


Figure 62. [doi](#)

Distribution of *Cacopsylla corcontum* (Šulc, 1909) in Bulgaria.

Cacopsylla crataegi (Schränk, 1801)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992), Burckhardt (2010).

Distribution: General distribution. Europe, North Africa, Caucasus, Middle East, India. **Distribution in Bulgaria** (Fig. 63). Published records: PSI, PSP, PVS, ROP,

RRW, SBW (Joakimov 1909, Klimaszewski 1965, Harizanov and Lauterer 1968, Głowacka and Harizanov 1983, Pramatarova et al. 2021, Pramatarova et al. 2023). Material examined: BN, DEL, DEP, PBS, PKQ, PKZ, PSA, PSI, PSP, PT, PVL, PVV, ROM, ROP, RPM, RPP, RPR, RRE, RRW, SBE, SBM, SBW, SPM, SPW.

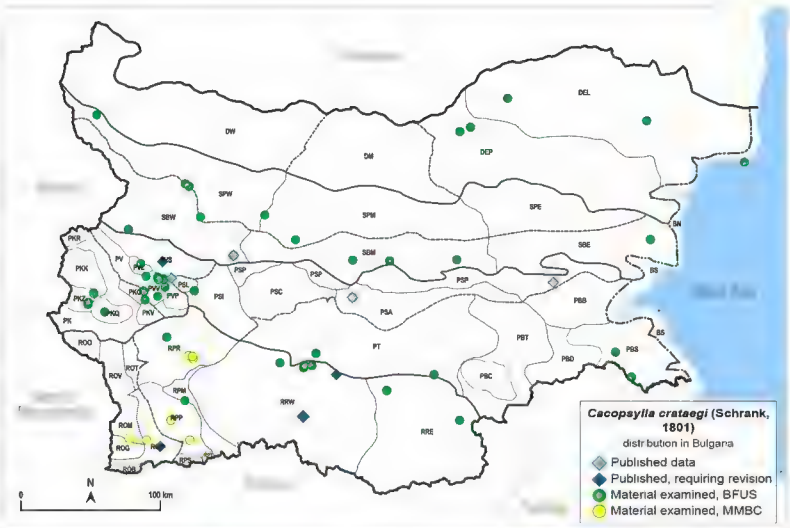


Figure 63. [doi](#)
Distribution of *Cacopsylla crataegi* (Schrank, 1801) in Bulgaria.

Cacopsylla mali (Schmidberger, 1836)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992), Burckhardt (2010).

Feeds on: Collected on *Malus domestica* (Suckow) Borkh. in Bulgaria (Głowacka and Harizanov 1983, Etropolska et al. 2015), which is a confirmed host plant (Ossiannilsson 1992).

Distribution: General distribution. Palaearctic, alien in North America, South Africa and Australia. **Distribution in Bulgaria** (Fig. 64). Published records: PSL, PVS, ROP, RRW, SBM (Klimaszewski 1970, Głowacka and Harizanov 1983, Głowacka 1989, Etropolska et al. 2015). Material examined: RPP, RPR.

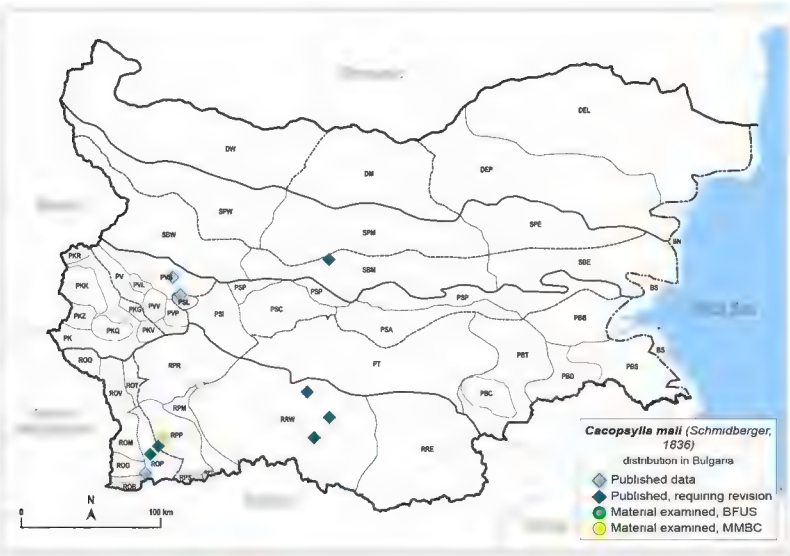


Figure 64. [doi](#)
Distribution of *Cacopsylla mali* (Schmidberger, 1836) in Bulgaria.

Cacopsylla melanoneura (Foerster, 1848)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992), Burckhardt (2010).

Feeds on: In Bulgaria, collected on *Crataegus* sp. (Głowacka and Harizanov 1983) and *Malus domestica* (Suckow) Borkh. (Etropolska et al. 2015), which are confirmed host plants (Ossiannilsson 1992).

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 65). Published records: DEP, PK, PKQ, PSA, PSL, PT, PVL, PVS, PVV, RPM, RPP, RRW, SBM, SBW, SPM (Klimaszewski 1970, Głowacka and Harizanov 1983, Głowacka 1989, Etropolska et al. 2015, Pramatarova et al. 2021, Pramatarova et al. 2023). Material examined: DEL, DEP, PBS, PBT, PKQ, PSI, PVL, PVS, PVV, ROM, ROO, ROP, ROV, RPM, RPP, RPR, RPS, RRE, RRW, SBM, SBW, SPW.

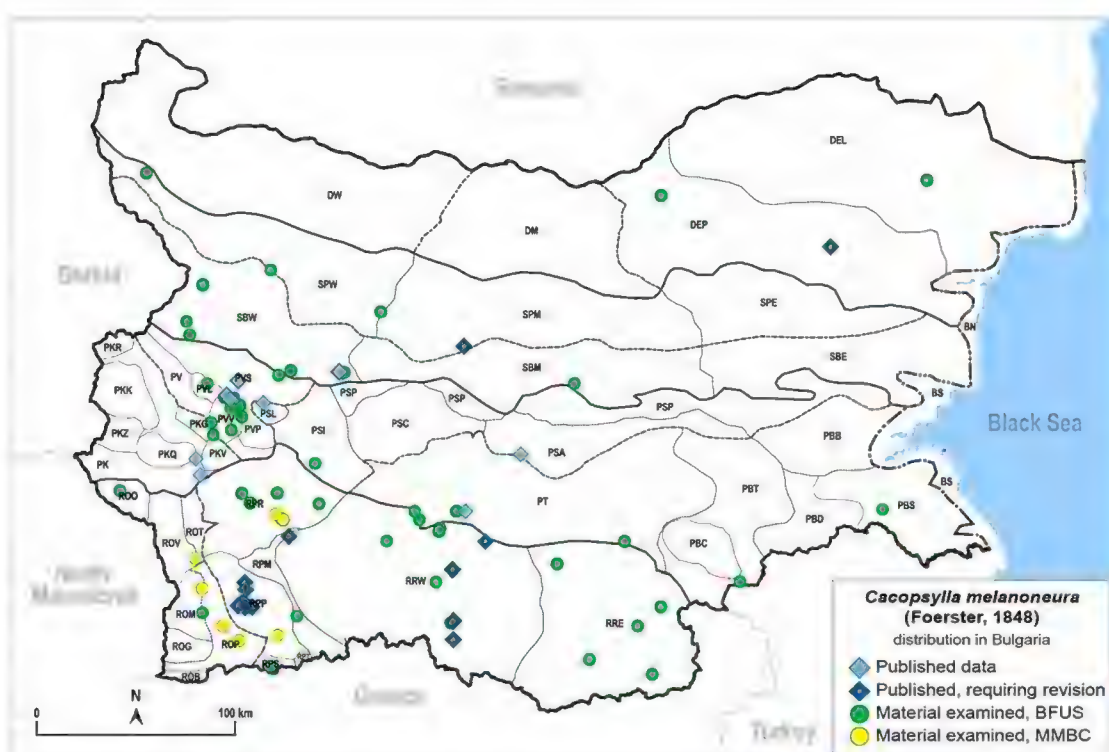


Figure 65. [doi](#)

Distribution of *Cacopsylla melanoneura* (Foerster, 1848) in Bulgaria.

Cacopsylla myrtilli (Wagner, 1947)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Feeds on: In Bulgaria, collected on *Vaccinium myrtillus* L. (Głowacka 1989), which is a confirmed host plant (Ossiannilsson 1992).

Distribution: General distribution. Central, northern and eastern Europe, Russia (European part, Siberia, Far East), Kazakhstan, North America. **Distribution in Bulgaria** (Fig. 66). Published records: ROV, RPP, RPR (Klimaszewski 1970, Głowacka 1989, Labina et al. 2009, Shapoval et al. 2021, Nokkala et al. 2022). Material examined: RPP, RPR.

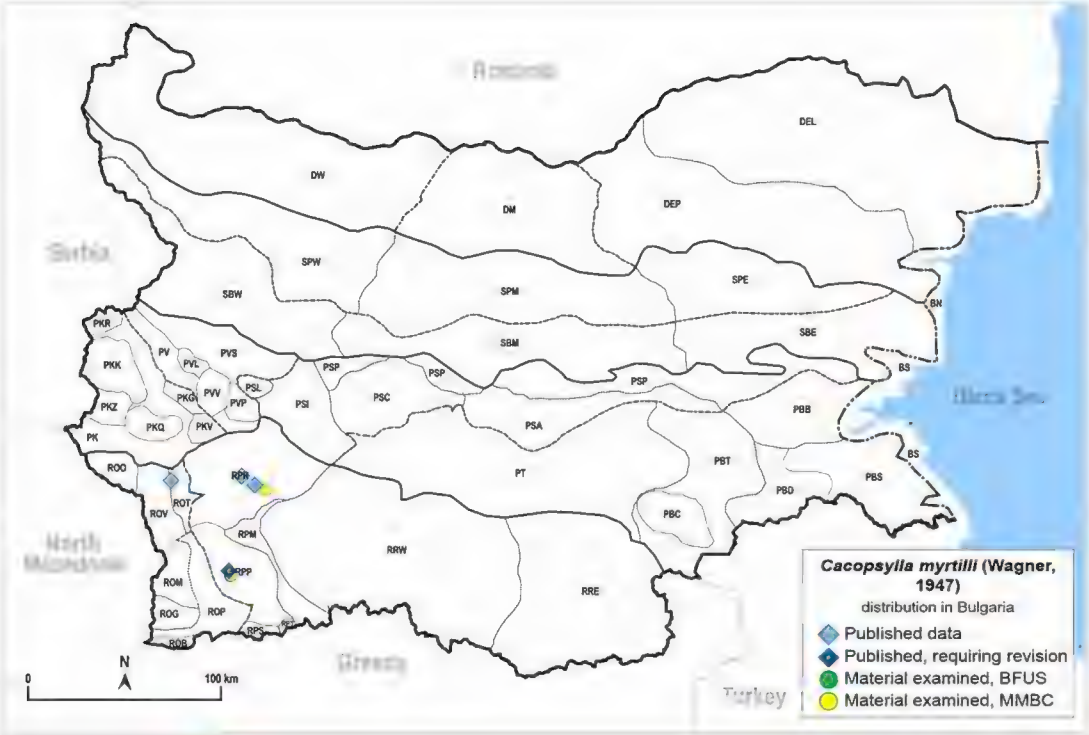


Figure 66. [doi](#)
Distribution of *Cacopsylla myrtilli* (Wagner, 1947) in Bulgaria.

Cacopsylla nigrita (Zetterstedt, 1828)

Diagnosis: Adult. Ossiannilsson (1992), Lauterer and Burckhardt (1997). **Fifth-instar immature.** Ossiannilsson (1992).

Distribution: General distribution. Europe, Caucasus, Kazakhstan (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 67). Published records: RPR (Klimaszewski 1965).

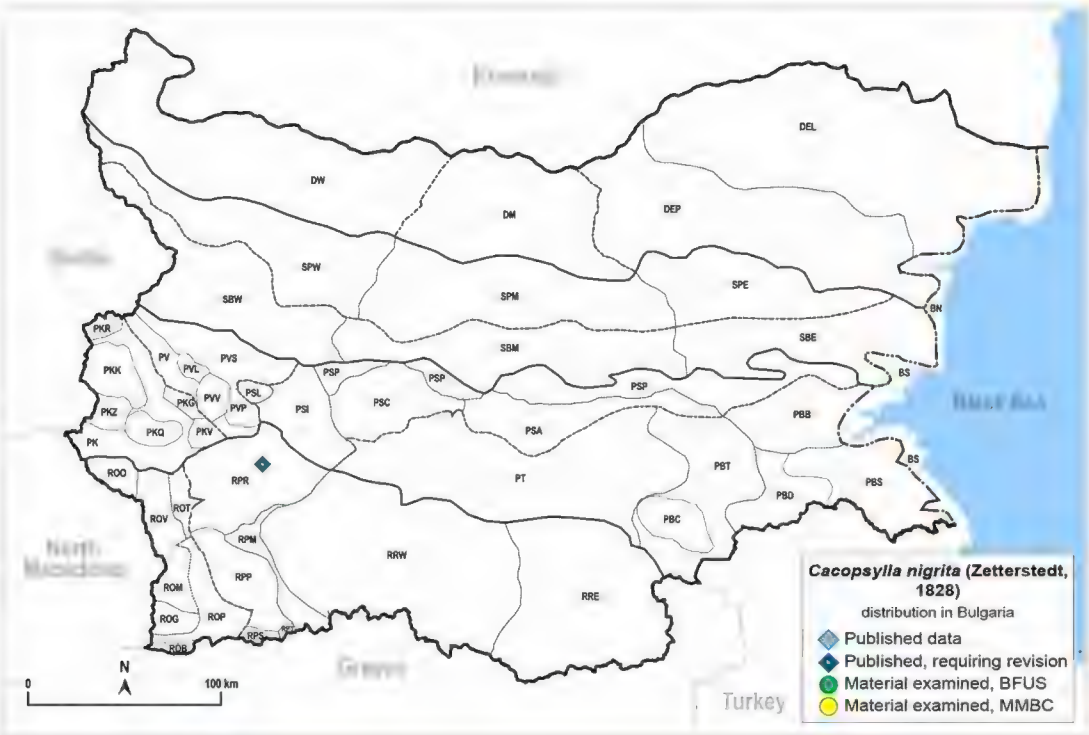


Figure 67. [doi](#)
Distribution of *Cacopsylla nigrita* (Zetterstedt, 1828) in Bulgaria.

Cacopsylla notata (Flor, 1861)

Diagnosis: Adult and fifth-instar immature. Burckhardt and Hodkinson (1986).

Feeds on: In Bulgaria, Głowacka (1989) and the authors collected adults on *Pyrus spinosa* Forssk., which is one of the confirmed host plants (Burckhardt and Hodkinson 1986, Cho et al. 2017b).

Distribution: General distribution. Southern Europe, Middle East. **Distribution in Bulgaria** (Fig. 68). Published records: ROP (Głowacka 1989). Material examined: ROP, ROV.

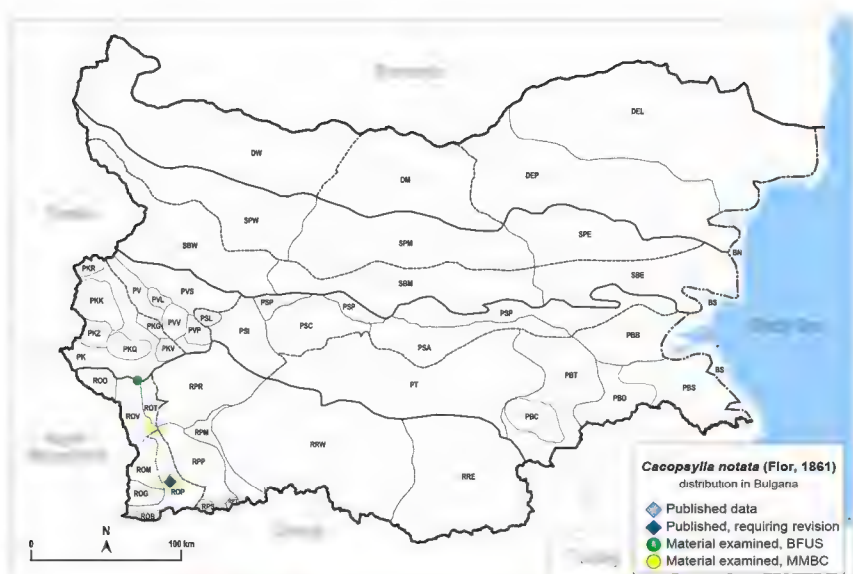


Figure 68. [doi](#)

Distribution of *Cacopsylla notata* (Flor, 1861) in Bulgaria.

Cacopsylla peregrina (Foerster, 1848)

Diagnosis: Adult (Fig. 69a) **and fifth-instar immature.** Ossiannilsson (1992), Burckhardt (2010).

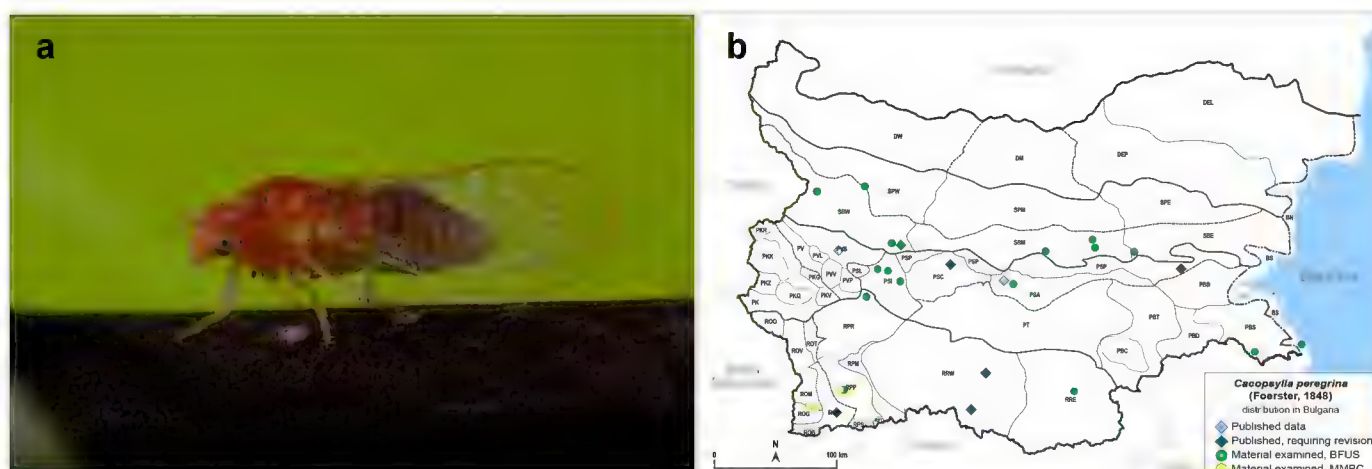


Figure 69.

Cacopsylla peregrina (Foerster, 1848).

a: *Cacopsylla peregrina*, adult male; [doi](#)

b: Distribution of *Cacopsylla peregrina* in Bulgaria. [doi](#)

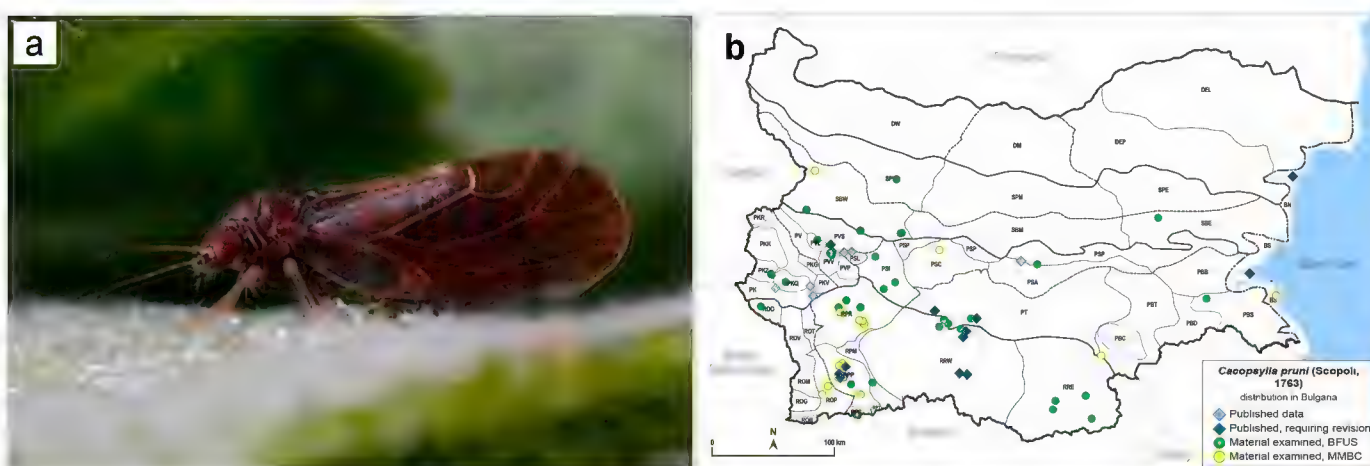


Figure 71.

Cacopsylla pruni (Scopoli, 1763).

a: *Cacopsylla pruni*, adult female; [doi](#)

b: Distribution of *Cacopsylla pruni* in Bulgaria. [doi](#)

Feeds on: Reported from *Prunus cerasifera* Ehrh., *P. insititia* L., *P. domestica* L. and *P. spinosa* L. in Bulgaria, which was also partially confirmed by immatures (Harizanov 1963, Harizanov 1966b, Etropolska et al. 2015).

Distribution: General distribution. Europe, North Africa, Caucasus, Middle East, Mongolia (Gegechkori and Loginova 1990, Sauvion et al. 2021). **Distribution in Bulgaria** (Fig. 71b). Published records: BS, PK, PKQ, PSL, PT, PVS, RPP, RRW (Harizanov 1963, Klimaszewski 1965, Harizanov 1966b, Głowacka and Harizanov 1983, Głowacka 1989, Etropolska et al. 2011, Etropolska et al. 2015, Pramatarova et al. 2023). Material examined: BN, PBS, PBT, PKQ, PKZ, PSC, PSI, PSP, PT, PVL, PVS, PVV, ROO, ROP, RPM, RPP, RPR, RPS, RRE, RRW, RRW, SBE, SBW, SPW.

Cacopsylla pulchella (Löw, 1877)

Diagnosis: Adult (Fig. 72a). Loginova (1964), Hodkinson and White (1979). **Fifth-instar immature.** White and Hodkinson (1982), Burckhardt (1999).

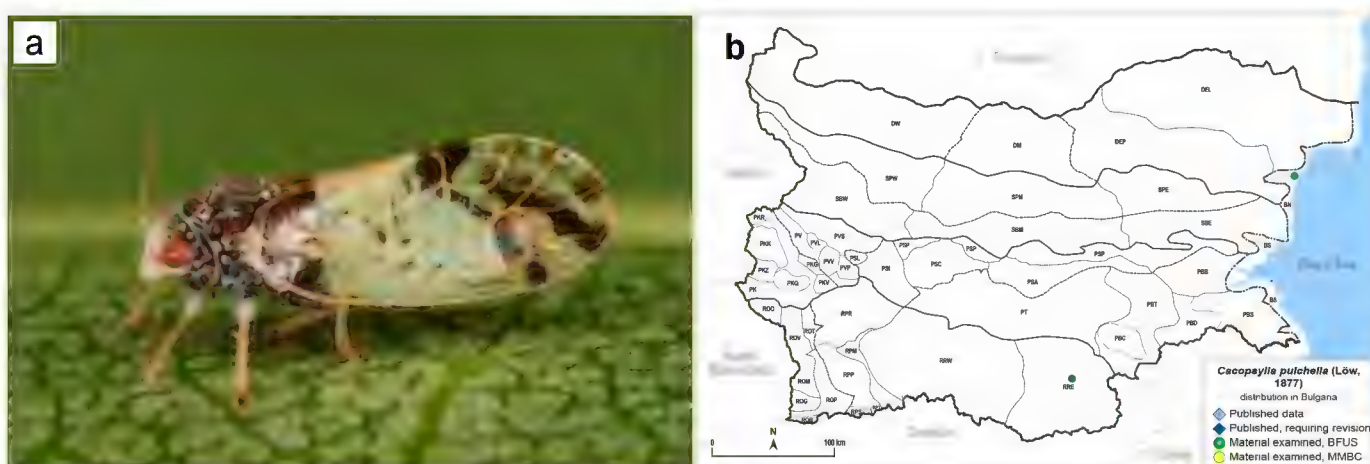


Figure 72.

Cacopsylla pulchella (Löw, 1877).

a: *Cacopsylla pulchella*, adult male; [doi](#)

b: Distribution of *Cacopsylla pulchella* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, adults and immatures were collected on *Pyrus communis* L. (Harizanov 1963, Harizanov 1966a, Harizanov 1966d, Etropolska et al. 2015), which is a confirmed host plant (Burckhardt and Hodkinson 1986, Cho et al. 2017b).

Distribution: General distribution. Europe, Caucasus, Middle East, Central Asia. **Distribution in Bulgaria** (Fig. 74). Published records: BN, BS, DEP, PK, PKQ, PSL, PT, PVS, PVV, RRE, RRW (Harizanov 1963, Klimaszewski 1965, Harizanov 1966a, Głowacka and Harizanov 1983, Etropolska et al. 2015, Pramatarova et al. 2023). Material examined: BS, DEL, DW, PT, PVV, ROV, RPP, RRE.

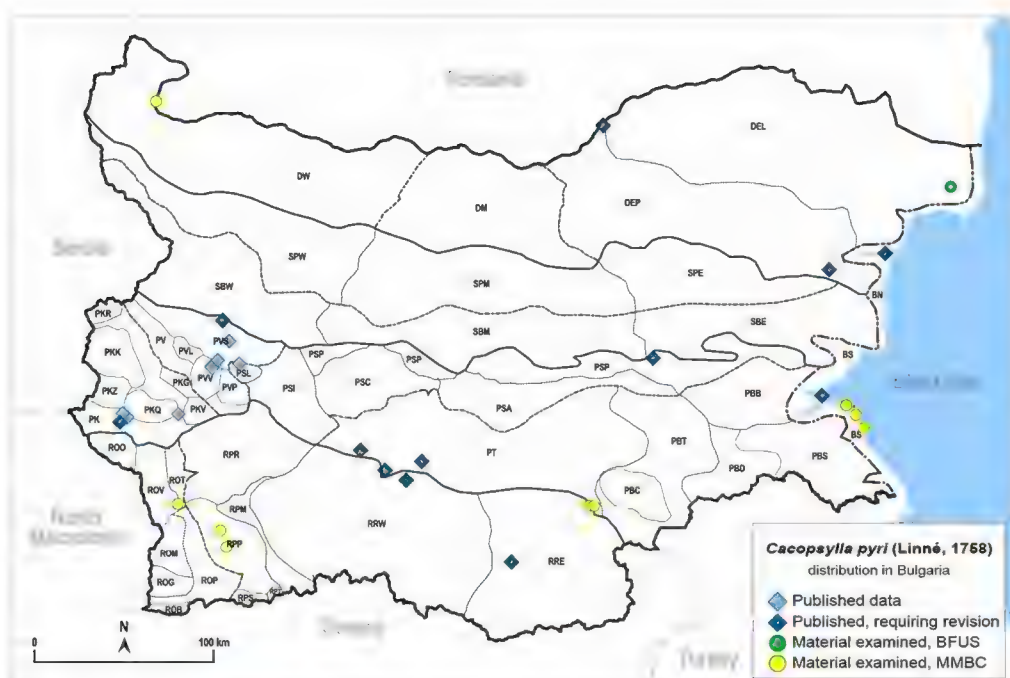


Figure 74. [doi](#)

Distribution of *Cacopsylla pyri* (Linnaeus, 1758) in Bulgaria.

Cacopsylla pyricola (Foerster, 1848)

Diagnosis: Adult and fifth-instar immature. Burckhardt and Hodkinson (1986), Burckhardt (2010).

Feeds on: In Bulgaria, collected from *Pyrus communis* L. (Etropolska et al. 2015), which is a confirmed host plant (Burckhardt and Hodkinson 1986, Cho et al. 2017b).

Distribution: General distribution. Europe, Turkey, Caucasus, alien in North America. **Distribution in Bulgaria** (Fig. 75). Published records: PBS, PK, PKQ, PVS, RRW (Klimaszewski 1965, Głowacka and Harizanov 1983, Etropolska et al. 2011, Etropolska et al. 2015). Material examined: BS, PBS, PSI, ROP, RPR, RRE, SBM, SBW, SPW.

Cacopsylla pyrisuga (Foerster, 1848)

Diagnosis: Adult and fifth-instar immature. Burckhardt and Hodkinson (1986), Burckhardt (2010).

Feeds on: In Bulgaria, adults and immatures were collected on *Pyrus communis* L. (Harizanov 1963, Harizanov 1966e, Etropolska et al. 2015), which is a confirmed host plant (Burckhardt and Hodkinson 1986, Cho et al. 2017b).

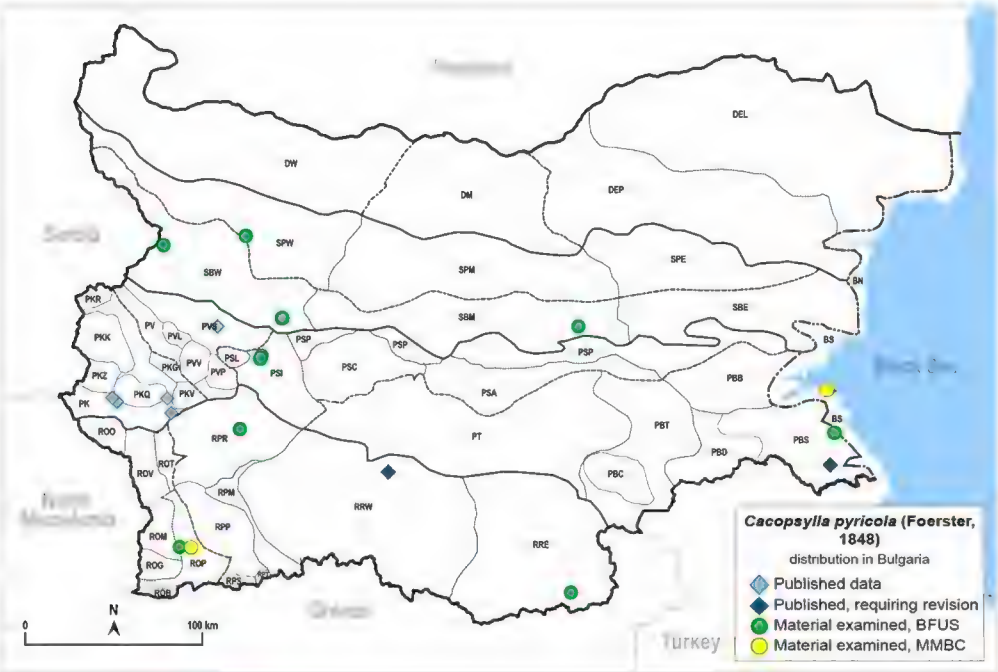


Figure 75. [doi](#)
Distribution of *Cacopsylla pyricola* (Foerster, 1848) in Bulgaria.

Distribution: General distribution. Europe, Caucasus, Middle East. **Distribution in Bulgaria** (Fig. 76). Published records: BN, BS, DEP, PBB, PK, PSC, PSL, PSP, PT, PVS, RPP, RRE, RRW, SBE (Joakimov 1909, Harizanov 1963, Harizanov 1964, Harizanov and Lauterer 1968, Klimaszewski 1965, Głowacka and Harizanov 1983, Etropolska et al. 2011, Etropolska et al. 2015, Pramatarova et al. 2023). Material examined: DEL, PKG, PKZ, PSI, PT, PVV, ROM, ROP, ROV, RPP, RPR, RPS, SBW.

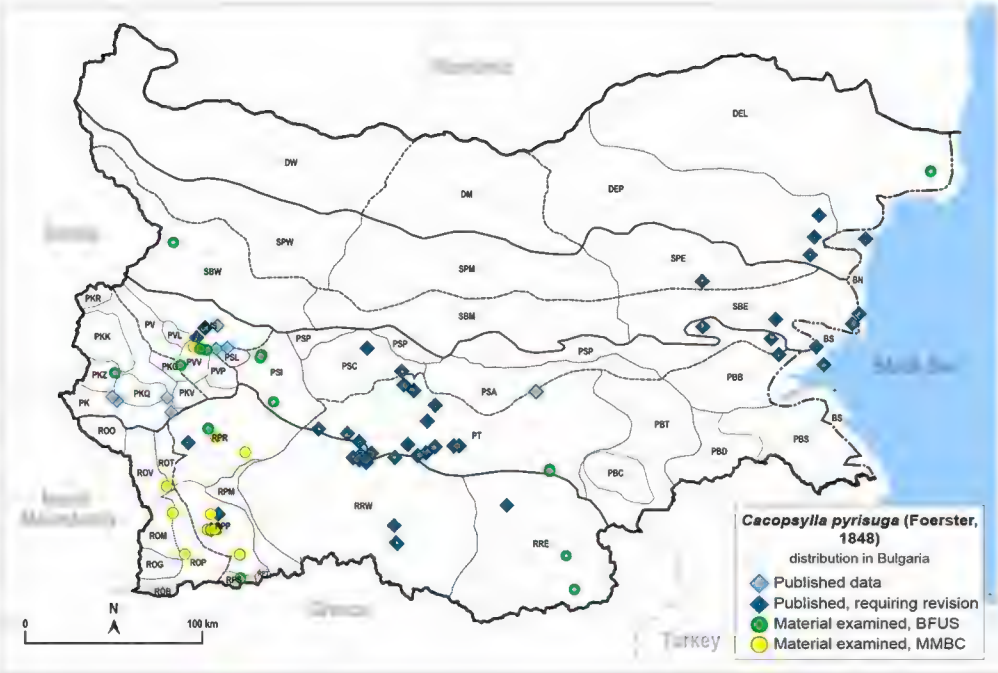


Figure 76. [doi](#)
Distribution of *Cacopsylla pyrisuga* (Foerster, 1848) in Bulgaria.

Cacopsylla rhamnicola (Scott, 1876)

Diagnosis: Adult (Fig. 77a) and fifth-instar immature. Ossiannilsson (1992).

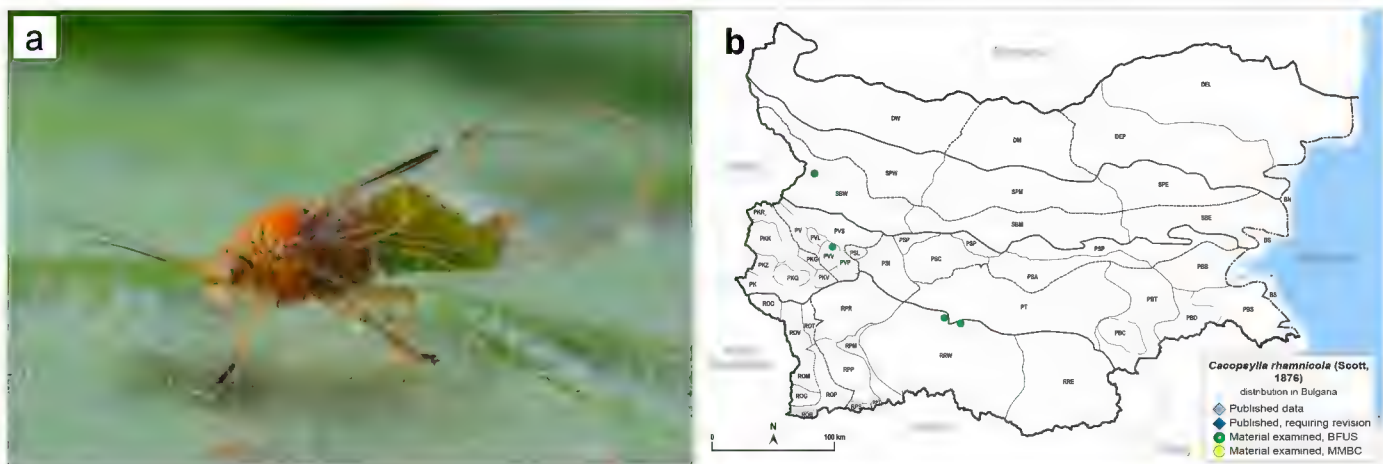


Figure 77.

Cacopsylla rhamnicola (Scott, 1876).

a: *Cacopsylla rhamnicola*, adult male [doi](#)

b: Distribution of *Cacopsylla rhamnicola* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, we collected adults on *Rhamnus cathartica* L., which is a confirmed host plant (Ossiannilsson 1992).

Distribution: General distribution. Europe, Turkey, Caucasus, Central Asia, Mongolia. **Distribution in Bulgaria** (Fig. 77b). Material examined: PVV, RRW, SBW.

Notes: New record for Bulgaria.

Cacopsylla saliceti (Foerster, 1848)

Diagnosis: Adult. Loginova (1967), Lauterer and Burckhardt (1997).

Feeds on: Collected on *Salix* spp. in Bulgaria (Głowacka and Harizanov 1983). Oligophagous on several *Salix* spp. (Lauterer and Burckhardt 1997, Percy and Cronk 2020).

Distribution: General distribution. Europe (except north), Caucasus, Middle East. **Distribution in Bulgaria** (Fig. 78). Published records: PK, ROP, RPP, RPR, RRW (Klimaszewski 1965, Harizanov and Lauterer 1968, Głowacka and Harizanov 1983, Głowacka 1989, Percy and Cronk 2020). Material examined: BN, DEP, PSI, PT, PVV, ROM, ROP, ROV, RPM, RPP, RPR, RPS, RRE, RRW, SBW.

Cacopsylla sorbi (Linnaeus, 1767)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Feeds on: In Bulgaria, collected on *Sorbus aucuparia* L. (Głowacka and Harizanov 1983), which is a confirmed host plant (Ossiannilsson 1992).

Distribution: General distribution. Europe, alien in North America. **Distribution in Bulgaria** (Fig. 79). Published records: RPP, RRW (Głowacka and Harizanov 1983, Głowacka 1989). Material examined: PVV, RPP, RPR.

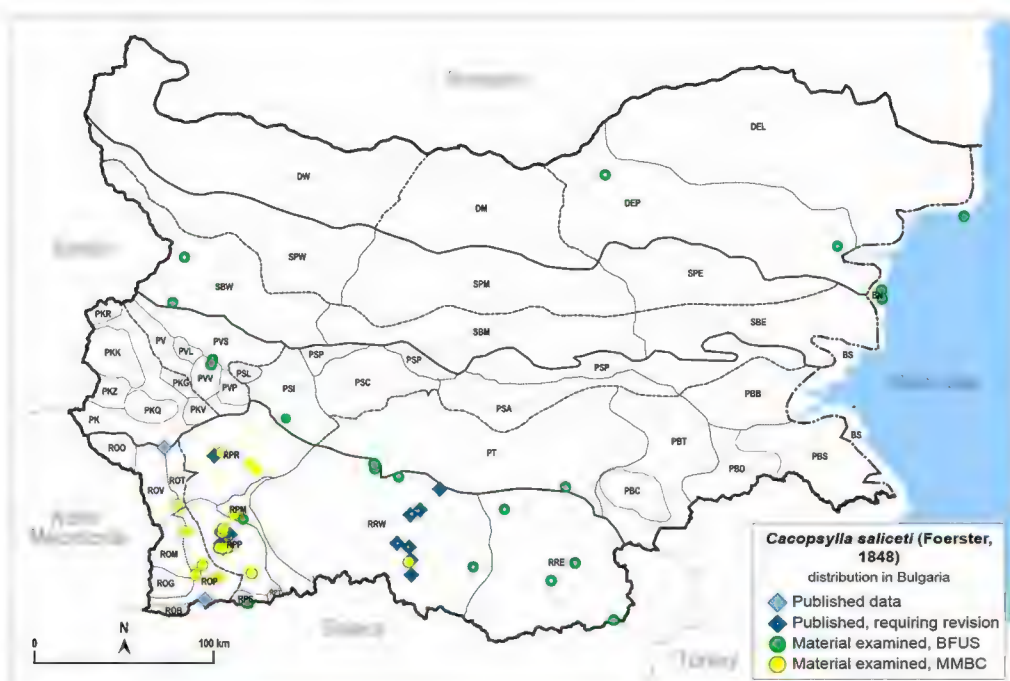


Figure 78. [doi](#)

Distribution of *Cacopsylla saliceti* (Foerster, 1848) in Bulgaria.

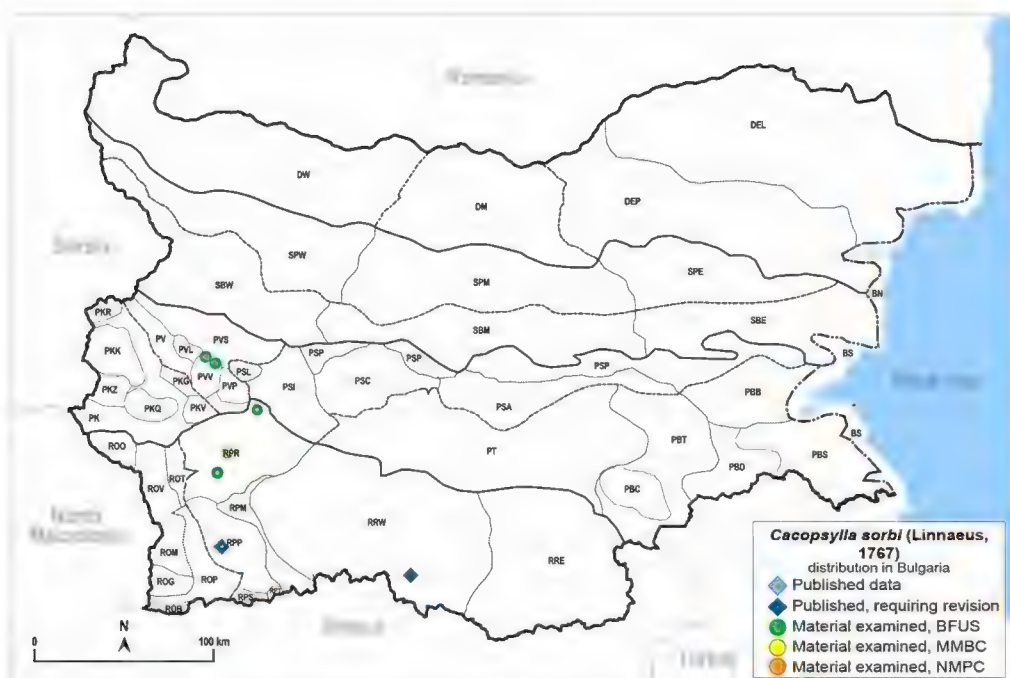


Figure 79. [doi](#)

Distribution of *Cacopsylla sorbi* (Linnaeus, 1767) in Bulgaria.

Cacopsylla ulmi (Foerster, 1848)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Distribution: General distribution. Europe, Caucasus, Central Asia, Russia (European part, Siberia and Far East) (Gegechkori and Loginova 1990). **Distribution**

in Bulgaria (Fig. 80). Published records: PVS (Pramatarova et al. 2023). Material examined: PSA, PVS, PVV, RPR, SBM, SPE, SPM.

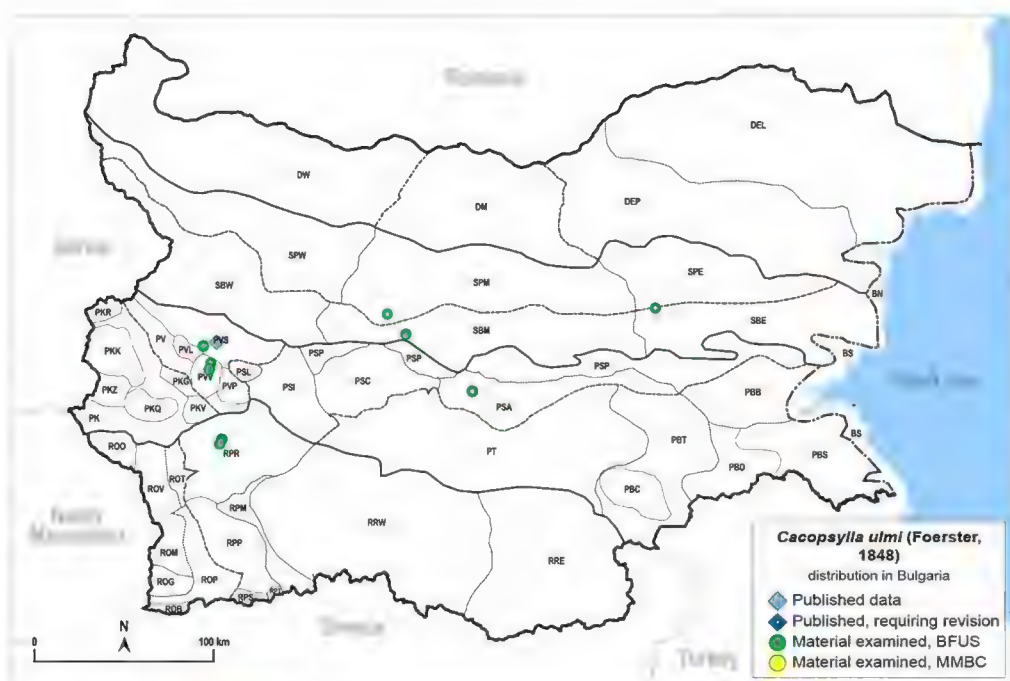


Figure 80. [doi](#)

Distribution of *Cacopsylla ulmi* (Foerster, 1848) in Bulgaria.

Cacopsylla visci (Curtis, 1835)

Diagnosis: Adult (Fig. 81a). Vondráček (1957a), Hodkinson and White (1979). **Fifth-instar immature**. White and Hodkinson (1982).

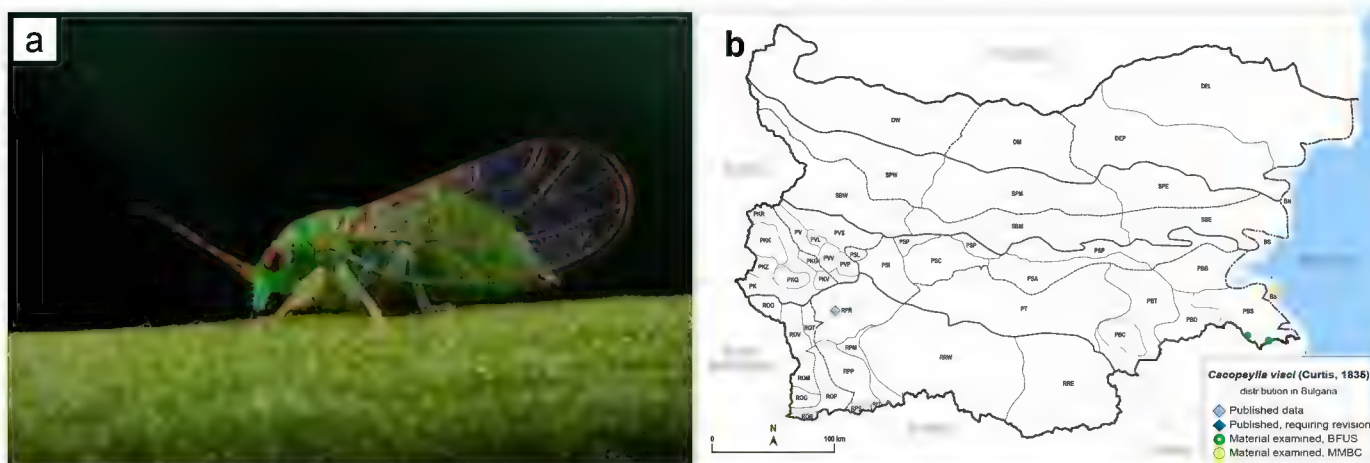


Figure 81.

Cacopsylla visci (Curtis, 1835).

a: *Cacopsylla visci*, adult female; [doi](#)

b: Distribution of *Cacopsylla visci* in Bulgaria. [doi](#)

Feeds on: We collected adults on *Viscum album* L., which is one of the confirmed host plants (Burckhardt et al. 2017).

Distribution: General distribution. Palearctic. **Distribution in Bulgaria** (Fig. 81b). Published records: RPR (Lauterer 1979). Material examined: BS, PBS, RPR.

Genus *Livilla* Curtis, 1836

Livilla cognata (Löw, 1881)

Diagnosis: Adult (Fig. 82a). Vondráček (1957a), Hodkinson and Hollis (1987).

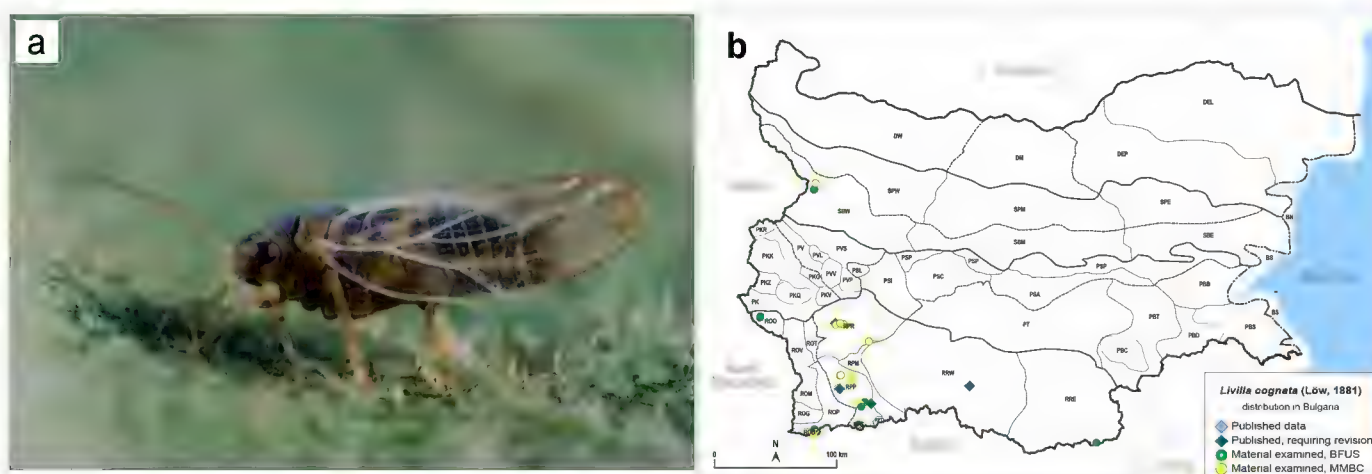


Figure 82.

Livilla cognata (Löw, 1881).

a: *Livilla cognata*, adult male (dark specimen collected in September); [doi](#)

b: Distribution of *Livilla cognata* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Chamaecytisus* spp. and probably also *Cytisus* and *Genista* spp. It was recorded from *Chamaecytisus ratisbonensis* (Schaeff.) Rothm. in Austria (Löw 1888) and Czechia (Lauterer 1965; I. Malenovský, personal observation), on *Genista germanica* in Czechia (Lauterer 1965), on *Ch. hirsutus* (L.) Link and *Cytisus nigricans* L. in Italy (Conci et al. 1993) and on *Ch. heuffelii* (Wierzb.) Rothm. in Serbia (Jerinić-Prodanović 2010). In Bulgaria, we collected adults and immatures on *Chamaecytisus elongatus* (Waldst. & Kit.) Link., which is a newly-confirmed host species. We also repeatedly collected adults on *Ch. austriacus* subsp. *stefanofii* (Stoj.) Kuzmanov, which is another probable host.

Distribution: General distribution. Central and south-eastern Europe, Caucasus. **Distribution in Bulgaria** (Fig. 82b). Published records: RPP, RPR, RRW (Klimaszewski 1970, Głowacka and Harizanov 1983, Głowacka 1989). Material examined: ROB, ROO, RPP, RPR, RPS, RRE, SBW.

Livilla horvathi (Scott, 1879)

Diagnosis: Adult (Fig. 83a). Vondráček (1957a), Hodkinson and Hollis (1987). **Fifth-instar immature** (Fig. 83b).

Feeds on: *Livilla horvathi* was collected from *Chamaecytisus austriacus* (L.) Link in Slovenia, Hungary and Slovakia (Löw 1888), *Genista tinctoria* L. in Romania (Dobreanu and Manolache 1962) and *G. sericea* Wulfen and *G. tinctoria* in Italy (Conci et al. 1993). In Bulgaria, we collected adults and one immature on *Genista lydia*

Boiss. and *Chamaecytisus elongatus* (Waldst. & Kit.) Link, which are also probable host plants.

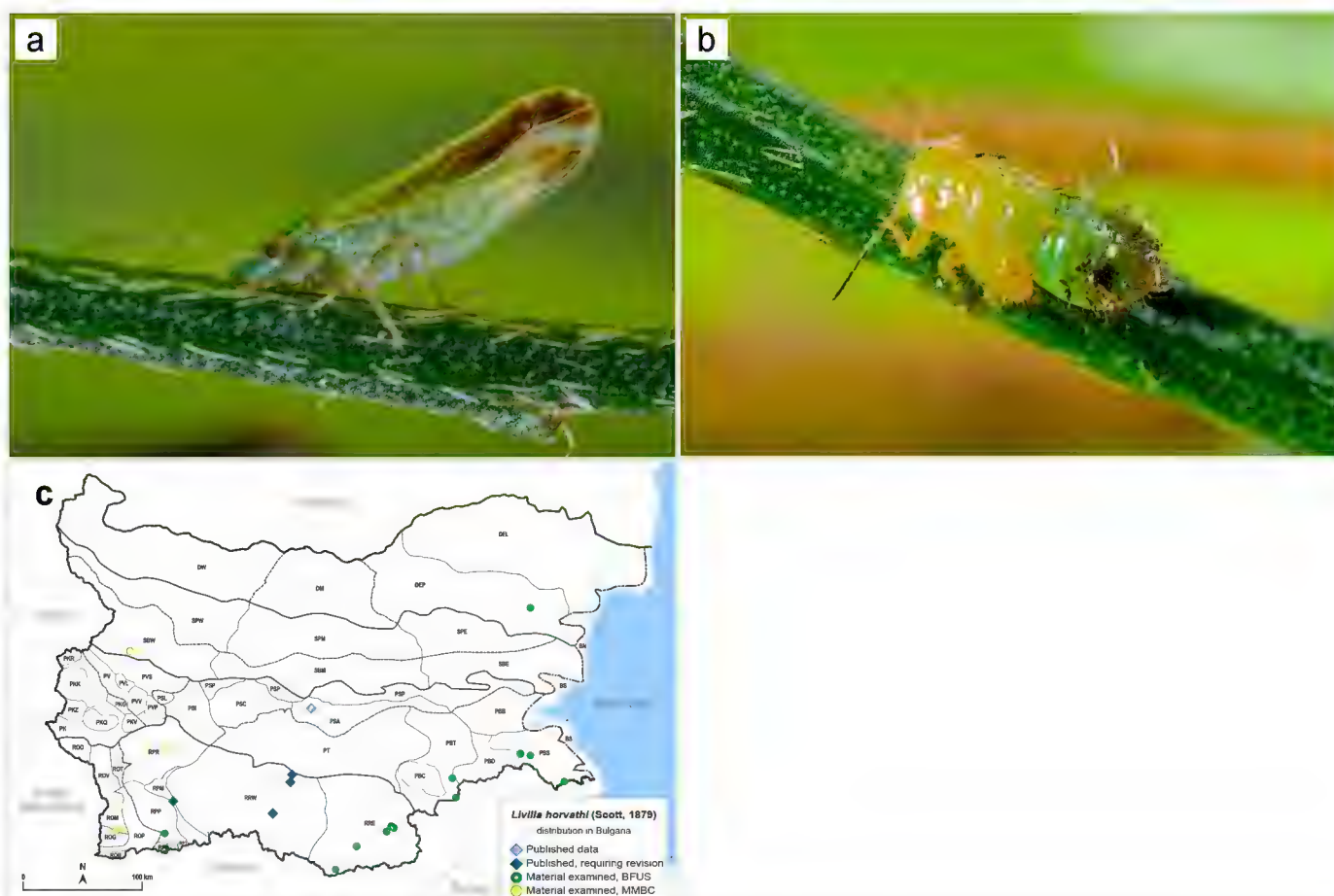


Figure 83.

Livilla horvathi (Scott, 1879).

a: *Livilla horvathi*, adult male; [doi](#)

b: *Livilla horvathi*, immature; [doi](#)

c: Distribution of *Livilla horvathi* in Bulgaria. [doi](#)

Distribution: General distribution. Central and south-eastern Europe, Turkey.
Distribution in Bulgaria (Fig. 83c). Published records: PSA, RPM, RRW (Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989, Pramatarova et al. 2021). Material examined: DEP, PBS, PBT, PSA, ROM, RPP, RPR, RPS, RRE, SBW.

Livilla radiata (Foerster, 1848)

Diagnosis: Adult (Fig. 84a). Vondráček (1957a), Hodkinson and Hollis (1987).

Feeds on: Oligophagous on *Chamaecytisus austriacus* (L.) Link., *Ch. borysthenticus* (Gruner) Klásk., *Ch. heuffelii* (Wierzb.) Rothm., *Ch. hirsutus* (L.) Link, *Ch. ratisbonensis* (Schaeff.) Rothm., *Cytisus nigricans* (L.) and *Cy. villosus* Pourr. (Löw 1888, Klimaszewski 1975, Andrianova and Klimaszewski 1983, Głowacka and Harizanov 1983, Conci et al. 1993, Malenovský et al. 2011). In south-western Bulgaria, we repeatedly collected adults on *Ch. austriacus* subsp. *stefanoffii* (Stoj.) Kuzmanov, syntopic with *Arytaina maculata* and *Livilla cognata*.

Distribution: General distribution. Central and south-eastern Europe. **Distribution in Bulgaria** (Fig. 84b). Published records: RRW (Klimaszewski 1965, Głowacka and Harizanov 1983). Material examined: ROB, ROP, RPP, RPR, RPS, RRE, RRW, SPM.

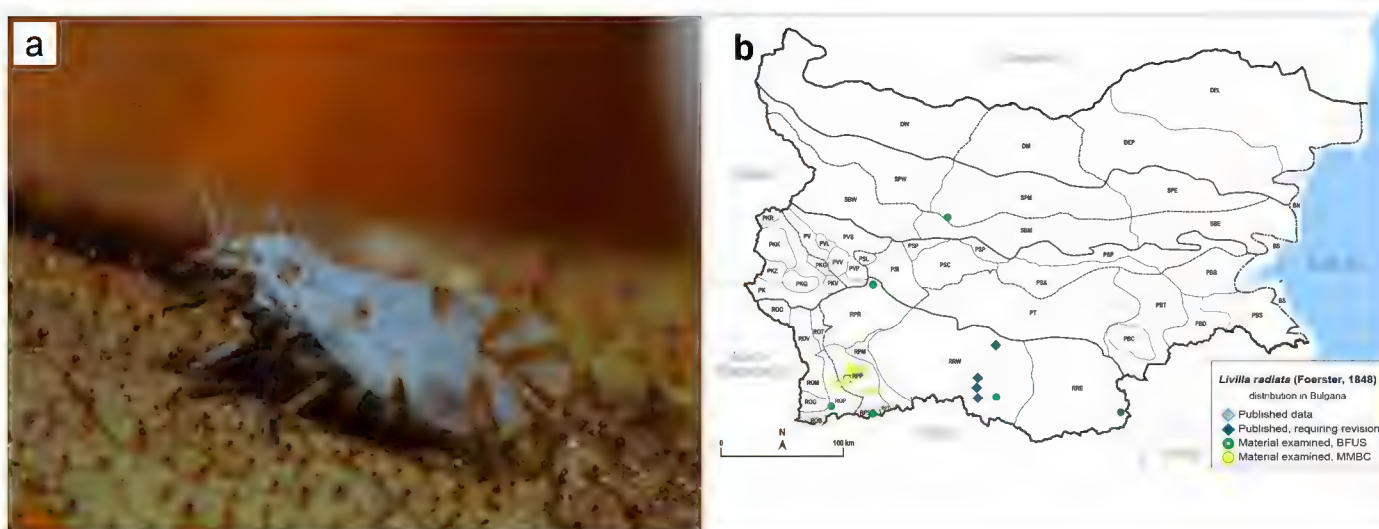


Figure 84.

Livilla radiata (Foerster, 1848).

a: *Livilla radiata*, adult female; [doi](#)

b: Distribution of *Livilla radiata* in Bulgaria. [doi](#)

Livilla ulicis Curtis, 1836

Diagnosis: Adult (Fig. 85a). Vondráček (1957a), Hodkinson and Hollis (1987). **Fifth-instar immature.** Loginova (1976), White and Hodkinson (1982).

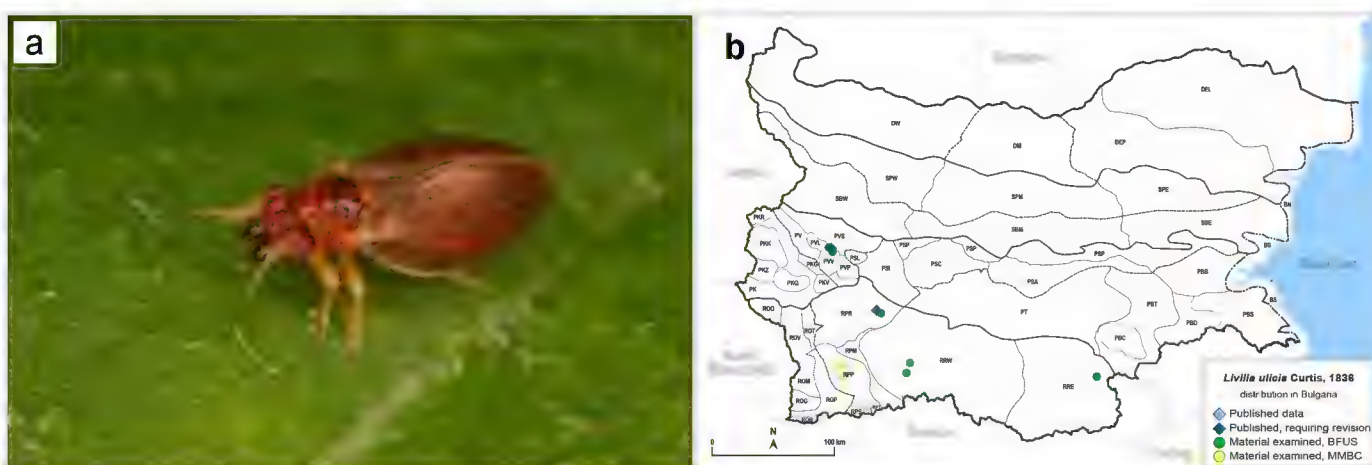


Figure 85.

Livilla ulicis Curtis, 1836.

a: *Livilla ulicis*, adult; [doi](#)

b: Distribution of *Livilla ulicis* in Bulgaria. [doi](#)

Distribution: General distribution. Europe (except north). **Distribution in Bulgaria** (Fig. 85b). Published records: PVV, RPR (Joakimov 1909, Klimaszewski 1965). Material examined: PVV, RPP, RPR, RRE, RRW.

Livilla variegata (Löw, 1881)

Diagnosis: Adult (Fig. 86a) Hodkinson and Hollis (1987). **Fifth-instar immature.** White and Hodkinson (1982).

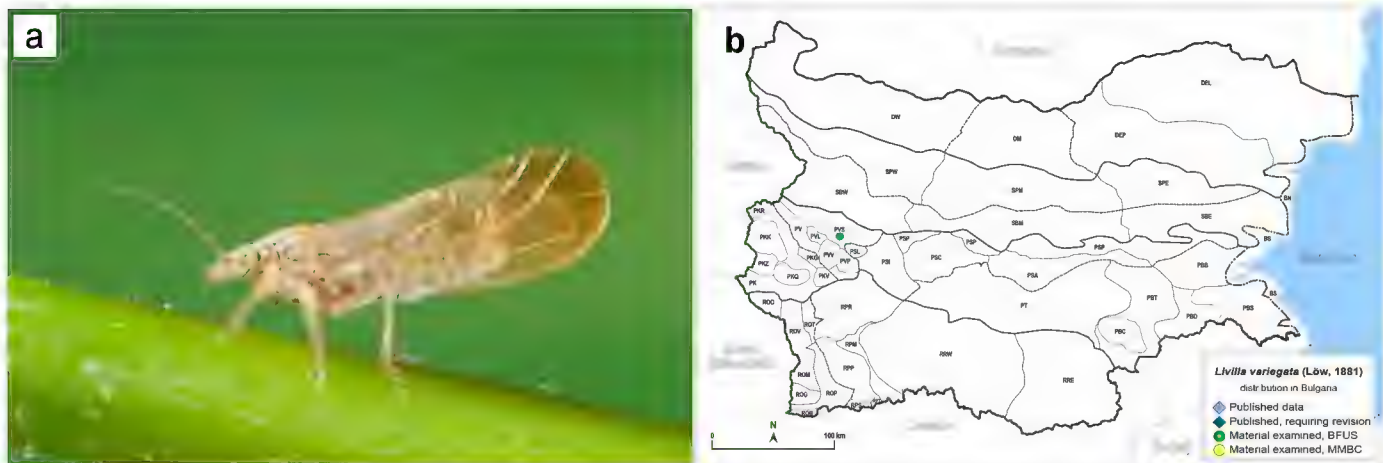


Figure 86.

Livilla variegata (Löw, 1881).

a: *Livilla variegata*, adult male; [doi](#)

b: Distribution of *Livilla variegata* in Bulgaria. [doi](#)

Feeds on: Both known host plants of *L. variegata*, *Laburnum anagyroides* Medik. and *L. alpinum* (Mill.) Bercht. & J.Presl, are not native to Bulgaria. Our specimens (adults and immatures) were collected on *L. anagyroides* in ornamental greenery in the Sofia agglomeration. *Laburnum anagyroides* is frequently planted as an ornamental tree in Bulgaria and spreads in both natural and disturbed habitats (Petrova et al. 2013).

Distribution: General distribution. Native to southern and some parts of central Europe (e.g. the Alps), alien in western and other parts of central Europe and North America. **Distribution in Bulgaria** (Fig. 86b). Material examined: PVS.

Notes: New record for Bulgaria.

Genus *Psylla* Geoffroy, 1762

Psylla alni (Linnaeus, 1758)

Diagnosis: Adult (Fig. 87a) and **fifth-instar immature.** Ossiannilsson (1992).

Feeds on: Collected on *Alnus glutinosa* (L.) Gaertn. (Głowacka and Harizanov 1983), which is one of the confirmed host plants (Ossiannilsson 1992).

Distribution: General distribution. Holarctic. **Distribution in Bulgaria** (Fig. 87b). Published records: ROP, RPP, RRW (Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989, Pramatarova et al. 2023). Material examined: BN, PKZ, PVS, ROM, ROP, RPM, RPP, RPR.

Feeds on: *Alnus* spp. (Głowacka 1989); we collected adults on *Alnus glutinosa* (L.) Gaertn., which is one of the confirmed host plants (Ossiannilsson 1992).

Distribution: General distribution. Europe, North Africa, Caucasus, Middle East, alien in New Zealand. **Distribution in Bulgaria** (Fig. 90b). Published records: PSA, PSP, PVL, PVS, ROP, RRW (Joakimov 1909, Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989, Pramatarova et al. 2021, Pramatarova et al. 2023). Material examined: BN, PKG, PKZ, PSA, PSP, PVV, ROM, ROP, RPM, RPR.

Psylla fusca (Zetterstedt, 1828)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Distribution: General distribution. Europe. **Distribution in Bulgaria** (Fig. 91). Published records: PK (Schaefer 1949). Material examined: PSP, ROM, ROP, RPR.

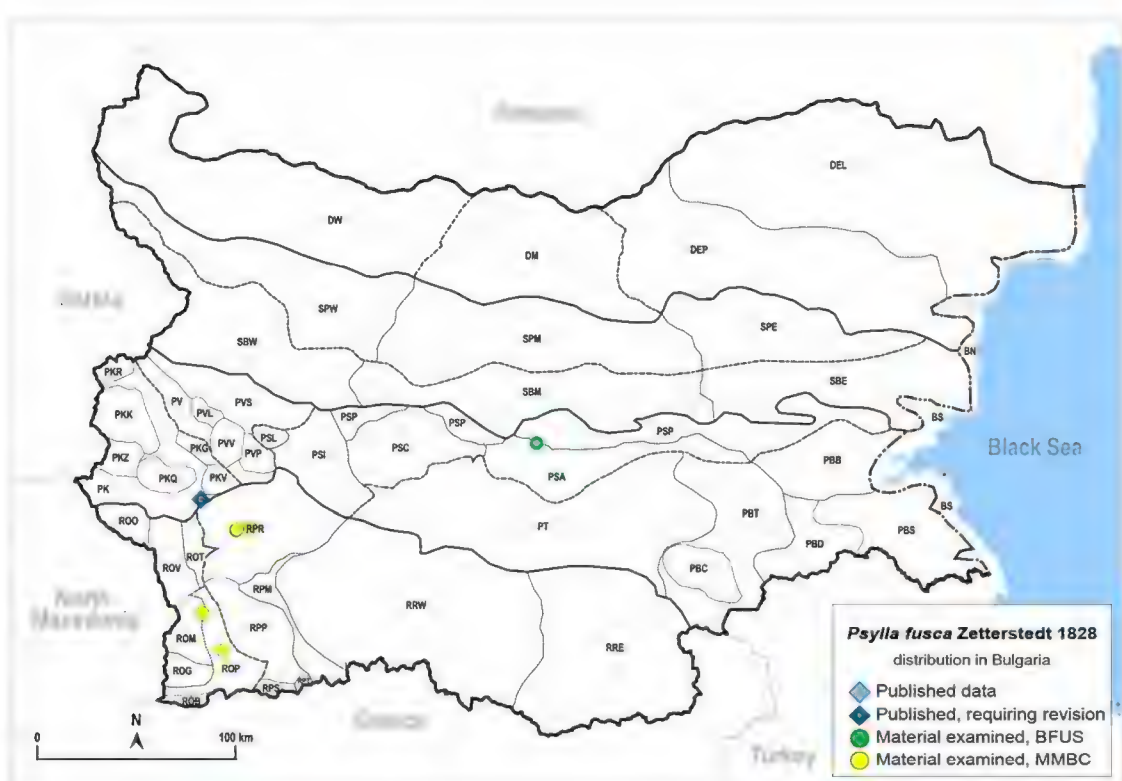


Figure 91. [doi](#)

Distribution of *Psylla fusca* Zetterstedt 1828 in Bulgaria.

Psylla hartigii Flor, 1861

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Feeds on: In Bulgaria, collected on *Betula* sp. (Głowacka and Harizanov 1983). Oligophagous on *Betula* spp. (Ossiannilsson 1992).

Distribution: General distribution. Holarctic. **Distribution in Bulgaria** (Fig. 92). Published records: RRW (Głowacka and Harizanov 1983). Material examined: RRW.

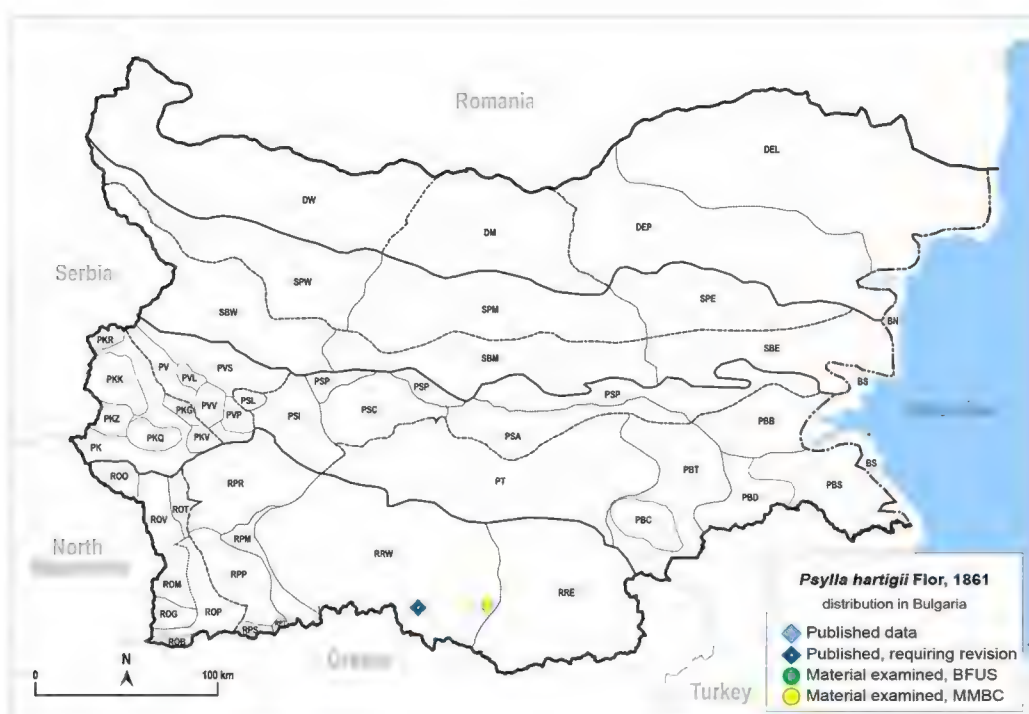


Figure 92. [doi](#)

Distribution of *Psylla hartigii* Flor, 1861 in Bulgaria.

Genus *Spanioneura* Foerster, 1848

Spanioneura buxi (Linnaeus, 1758)

Diagnosis: Adult (Fig. 93a) and fifth-instar immature. Ossiannilsson (1992).

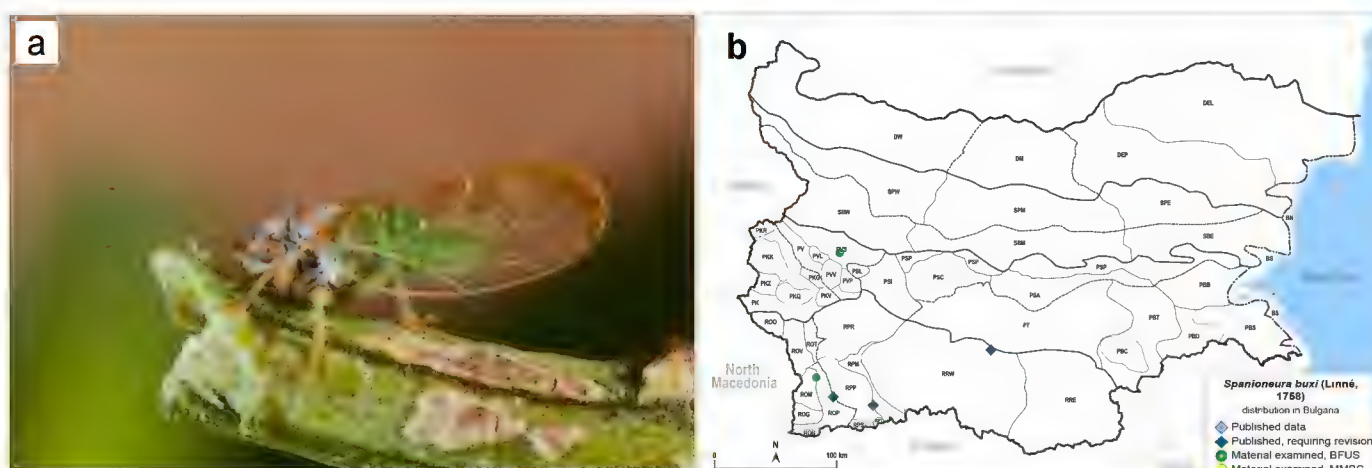


Figure 93.

Spanioneura buxi (Linnaeus, 1758).

a: *Spanioneura buxi*, adult male; [doi](#)

b: Distribution of *Spanioneura buxi* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Buxus* spp. (Hodkinson and White 1979). In Bulgaria, Głowacka and Harizanov (1983), Głowacka (1989) and the authors collected adults on *B. sempervirens* L., which is one of the confirmed host species. *Buxus sempervirens* is not native to Bulgaria (POWO 2024), but is widely cultivated as an ornamental plant.

Distribution: General distribution. Western and southern Europe, Caucasus, alien in Central, northern and eastern Europe, North America and Hawaii. **Distribution in Bulgaria** (Fig. 93b). Published records: ROP, RPP, RRW (Głowacka and Harizanov 1983, Głowacka 1989). Material examined: ROM, PVS.

Notes: *Spanioneura buxi* is an alien species in Bulgaria.

Spanioneura fonscolombii Foerster, 1848

Diagnosis: Adult. Hodkinson and White (1979). **Fifth-instar immature.** White and Hodkinson (1982).

Feeds on: We collected adults on *Buxus sempervirens* L., which is the only confirmed host plant (Hodkinson and White 1979, Burckhardt and Mühlethaler 2003).

Distribution: General distribution. Western and southern Europe, Caucasus (Gegechkori and Loginova 1990), alien in central, northern and eastern Europe, North America and Australia (Oswald 2022, Prunar et al. 2023). **Distribution in Bulgaria** (Fig. 94). Material examined: PVS.

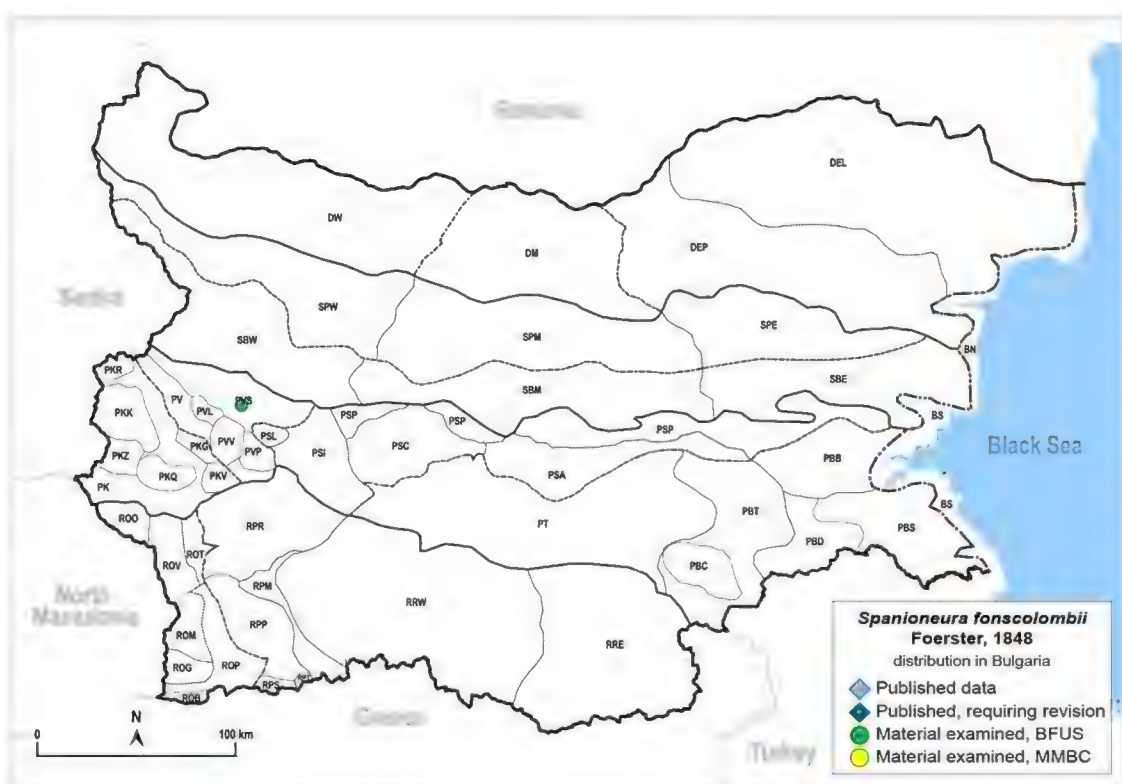


Figure 94. [doi](#)

Distribution of *Spanioneura fonscolombii* Foerster, 1848 in Bulgaria.

Notes: New record for Bulgaria. *Spanioneura fonscolombii* has spread in Europe on cultivated box trees in the last two decades. Our record from Bulgaria (from ornamental greenery in a city park) is further evidence of its expansion after the recent records in Romania, Austria and other countries (Oswald 2022, Prunar et al. 2023).

Family Triozidae Löw, 1879

Genus *Bactericera* Puton, 1876

Bactericera albiventris (Foerster, 1848)

Diagnosis: Adult (Fig. 95a) **and fifth-instar immature**. Ossiannilsson (1992), Burckhardt and Lauterer (1997b).

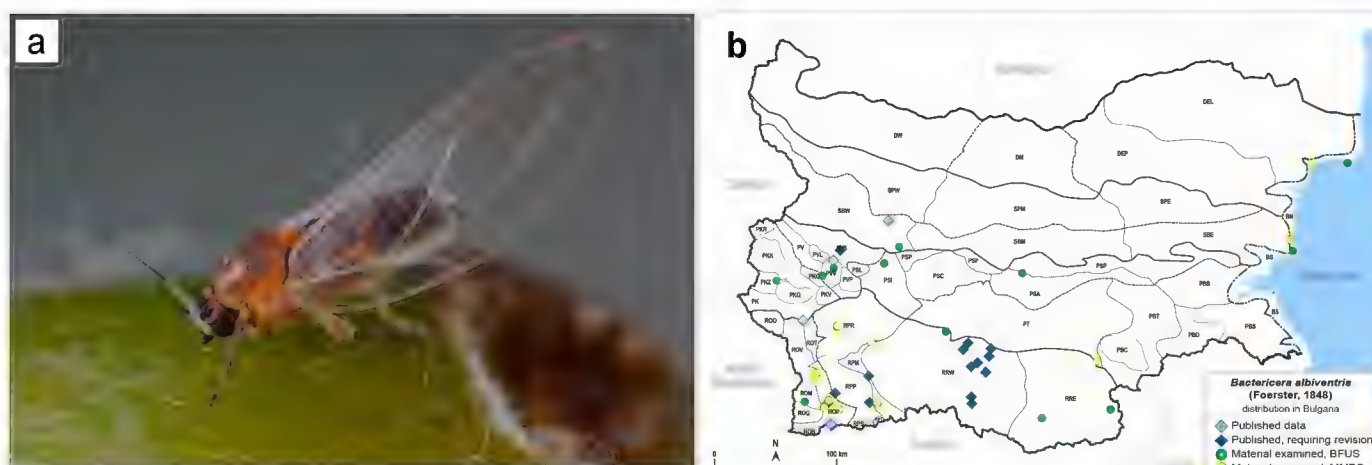


Figure 95.

Bactericera albiventris (Foerster, 1848).

a: *Bactericera albiventris*, adult female; [doi](#)

b: Distribution of *Bactericera albiventris* in Bulgaria. [doi](#)

Feeds on: Oligophagous on several *Salix* spp. (Głowacka 1989, Ossiannilsson 1992, Burckhardt and Lauterer 1997b, Percy and Cronk 2020). We collected adults on *Salix alba* L., which is one of the confirmed host plants.

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 95b). Published records: PK, PVS, PVV, ROP, RPM, RPP, RRW, SBW (Joakimov 1909, Głowacka and Harizanov 1983, Głowacka 1989, Percy and Cronk 2020, Pramatarova et al. 2023). Material examined: BN, PKG, PKZ, PSI, PSP, PT, PVV, ROM, ROP, RPM, RPR, RRE, RRW, SBW.

Bactericera bohémica (Šulc, 1913)

Diagnosis: Adult and fifth-instar immature. Conci and Tamanini (1985c), Ossiannilsson (1992).

Feeds on: *Geum montanum* L. (Głowacka 1989), which is one of the confirmed host plants (Ossiannilsson 1992).

Distribution: General distribution. Northern Europe, mountains in central and south-eastern Europe, Caucasus, southern Siberia and Mongolia (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 96). Published records: RPP

Bactericera femoralis (Foerster, 1848)

Diagnosis: Adult (Fig. 98a) and fifth-instar immature. Ossiannilsson (1992).

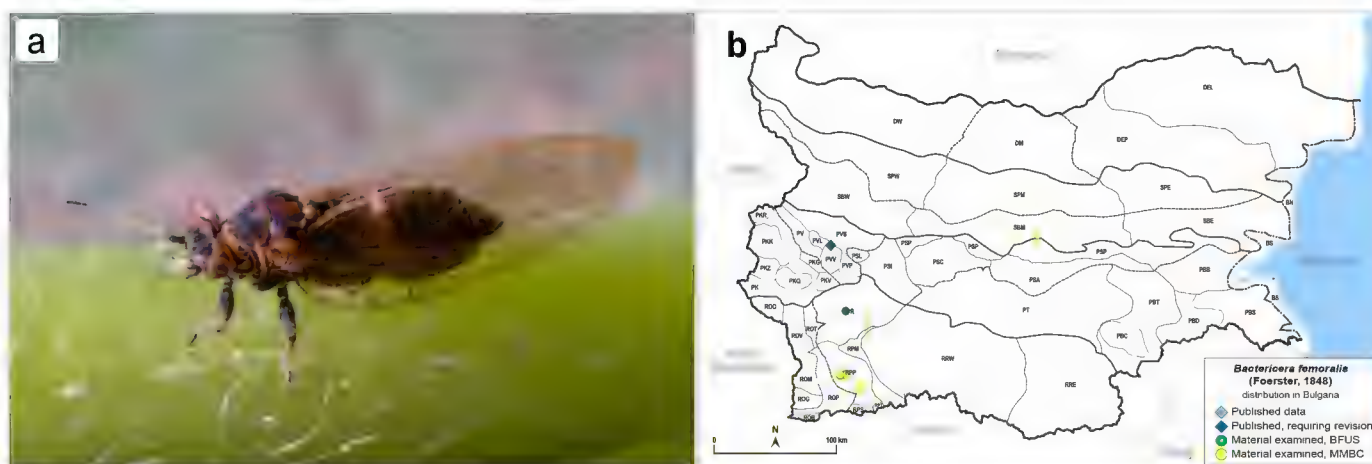


Figure 98.

Bactericera femoralis (Foerster, 1848).

a: *Bactericera femoralis*, adult female; [doi](#)

b: Distribution of *Bactericera femoralis* in Bulgaria. [doi](#)

Feeds on: Oligophagous on *Alchemilla* spp. (Ossiannilsson 1992, Burckhardt and Lauterer 1997b), on which we also collected adults in Bulgaria.

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 98b). Published records: PVV (Klimaszewski 1965). Material examined: RPP, RPR, SBM.

Bactericera harrisoni (Wagner, 1955)

Diagnosis: Adult. Conci and Tamanini (1985c).

Distribution: General distribution. Mountains in central and south-eastern Europe (Austria, Czechia, Italy, Romania, Slovakia, Slovenia, Switzerland). **Distribution in Bulgaria** (Fig. 99). Material examined: RPP.

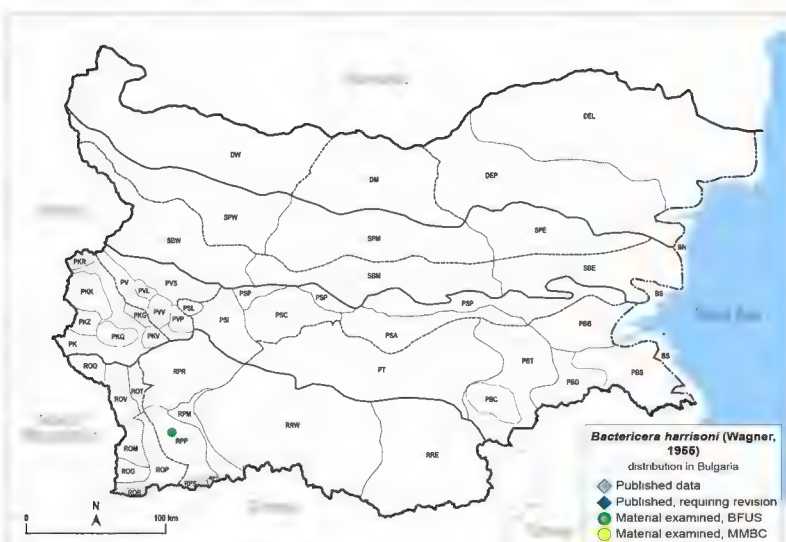


Figure 99. [doi](#)

Distribution of *Bactericera harrisoni* (Wagner, 1955) in Bulgaria.

Notes: New record for Bulgaria. The record of the similar and closely-related *B. reuteri* (Šulc, 1913) from the Western Rhodopes (RRW) published by Glowacka and Harizanov (1983) could indeed concern *B. harrisoni* (see the comment under Doubtful records below).

***Bactericera lyrata* Seljak, Malenovský & Lauterer, 2008**

Diagnosis: Adult (Fig. 100a). Seljak et al. (2008). **Fifth-instar immature.** Seljak and Malenovský (2014).

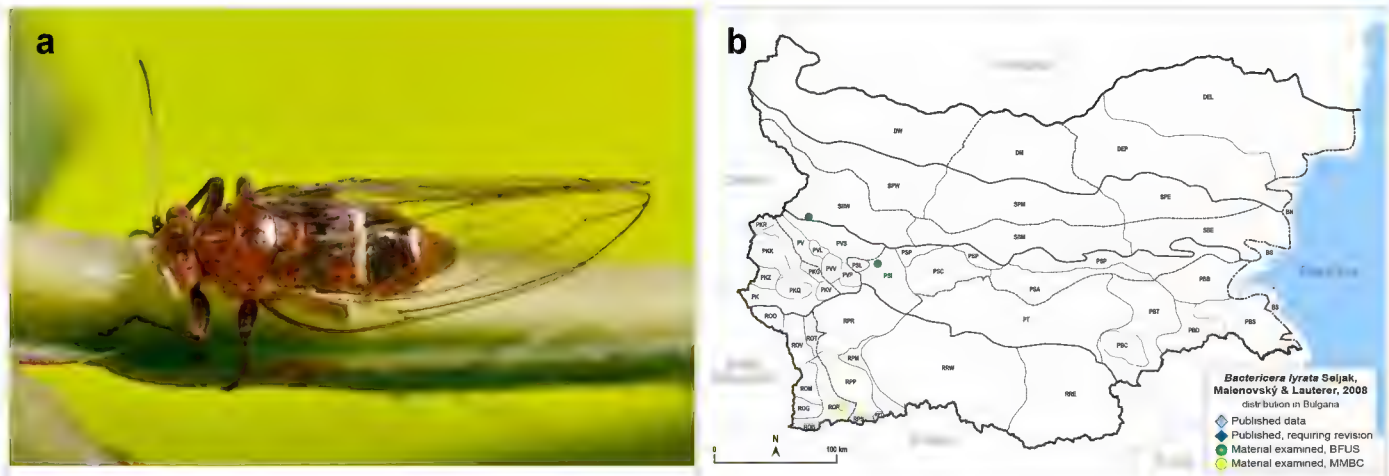


Figure 100.

Bactericera lyrata Seljak, Malenovský & Lauterer, 2008.

a: *Bactericera lyrata*, adult male; [doi](#)

b: Distribution of *Bactericera lyrata* in Bulgaria. [doi](#)

Distribution: General distribution. Central and south-eastern Europe (Czechia, Hungary, Slovenia). **Distribution in Bulgaria** (Fig. 100b). Material examined: PSI, ROP, SBW.

Notes: New record for Bulgaria. The record of the similar and closely related *B. reuteri* (Šulc, 1913) from the Western Rhodopes (RRW) published by Glowacka and Harizanov (1983) could indeed concern *B. lyrata* or *B. harrisoni* (see the comment under 'Doubtful records' below).

***Bactericera modesta* (Foerster, 1848)**

Diagnosis: Adult (Fig. 101a) Burckhardt and Lauterer (1997b), Seljak et al. (2008). **Fifth-instar immature.** Burckhardt and Lauterer (1997b).

Feeds on: In Bulgaria, we collected adults on *Sanguisorba minor* Scop., which is one of the confirmed host plants (Burckhardt and Lauterer 1997b).

Distribution: General distribution. South-western, central and south-eastern Europe, Central Asia and Mongolia. **Distribution in Bulgaria** (Fig. 101b). Published records: Bulgaria, without locality data (Burckhardt and Lauterer 1997b), PSA

(Pramatarova et al. 2021), RRW (Głowacka and Harizanov 1983). Material examined: BS, PBS, PSA, PT, ROP, RPS, RRE.

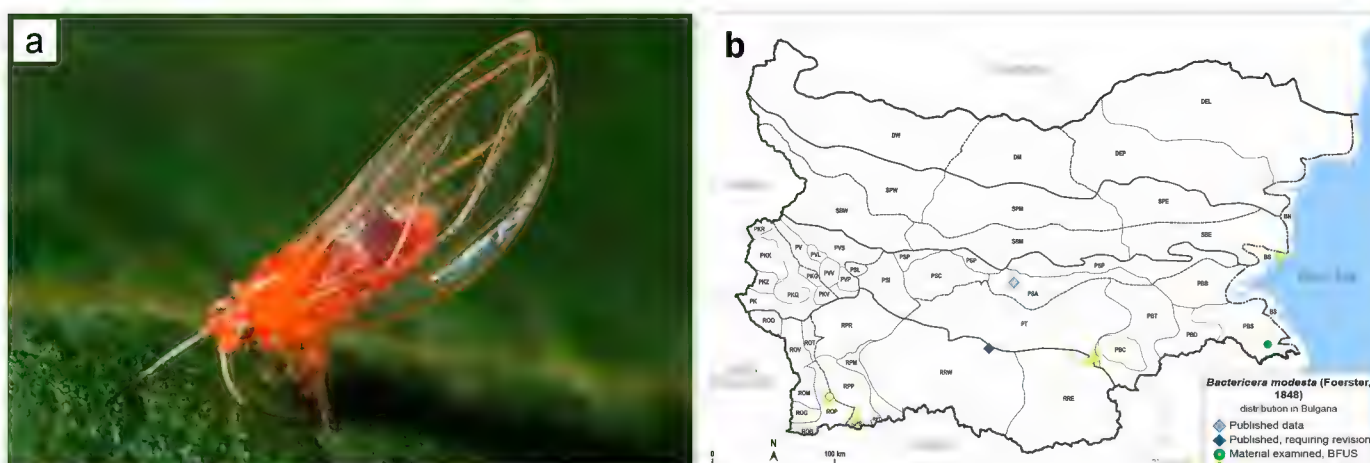


Figure 101.

Bactericera modesta (Foerster, 1848).

a: *Bactericera modesta*, adult female; [doi](#)

b: Distribution of *Bactericera modesta* in Bulgaria. [doi](#)

Bactericera nigricornis (Foerster, 1848)

Diagnosis: Adult (Fig. 102a) and fifth-instar immature. Ossiannilsson (1992), Burckhardt and Freuler (2000).

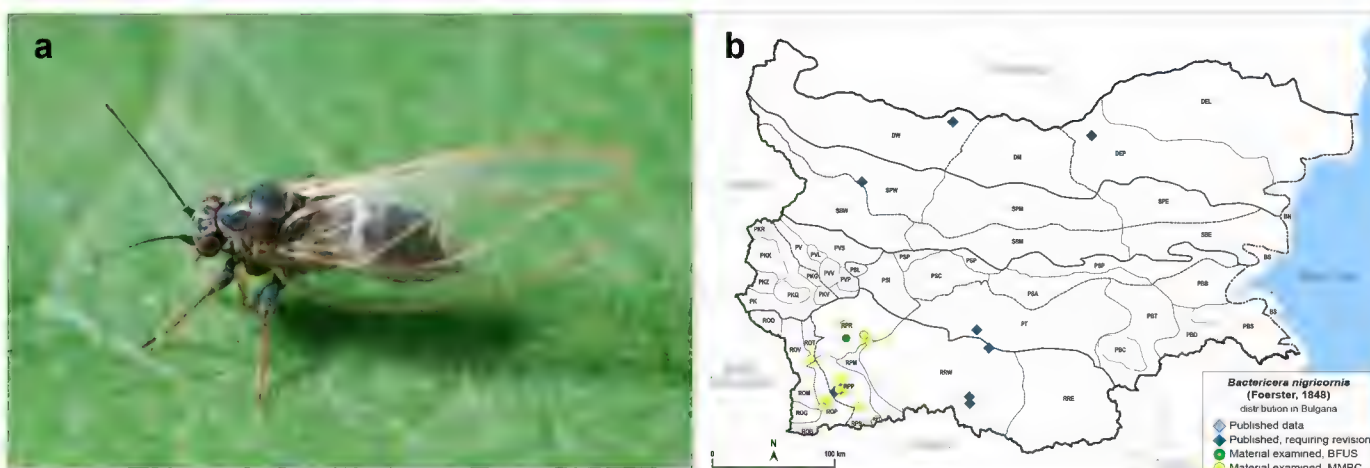


Figure 102.

Bactericera nigricornis (Foerster, 1848).

a: *Bactericera nigricornis*, adult female; [doi](#)

b: Distribution of *Bactericera nigricornis* in Bulgaria. [doi](#)

Feeds on: Polyphagous (Ossiannilsson 1992). In Bulgaria, reported from *Allium cepa* L. (Konov 1961), *Brassica oleracea* L., *Daucus carota* L. (Harizanov and Lauterer 1968) and *Solanum tuberosum* L. (Harizanov 1970).

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 102b). Published records: DEP, DW, PT, RPP, RRW (Konov 1961, Harizanov and Lauterer

1968, Głowacka and Harizanov 1983, Głowacka 1989). Material examined: ROP, ROV, RPP, RPR.

Notes: The report by Konov (1961) on *B. nigricornis* from *Allium cepa* could concern the similar *Bactericera tremblayi* (Wagner, 1961), which is known from onion and leek crops in neighbouring countries (Serbia, Greece and Turkey: Jerinić-Prodanović (2010), Ouvrard and Burckhardt (2012)), but has not been documented from Bulgaria.

***Bactericera perrisii* Puton, 1876**

Diagnosis: Adult (Fig. 103a) and fifth-instar immature. Burckhardt and Lauterer (1997b).

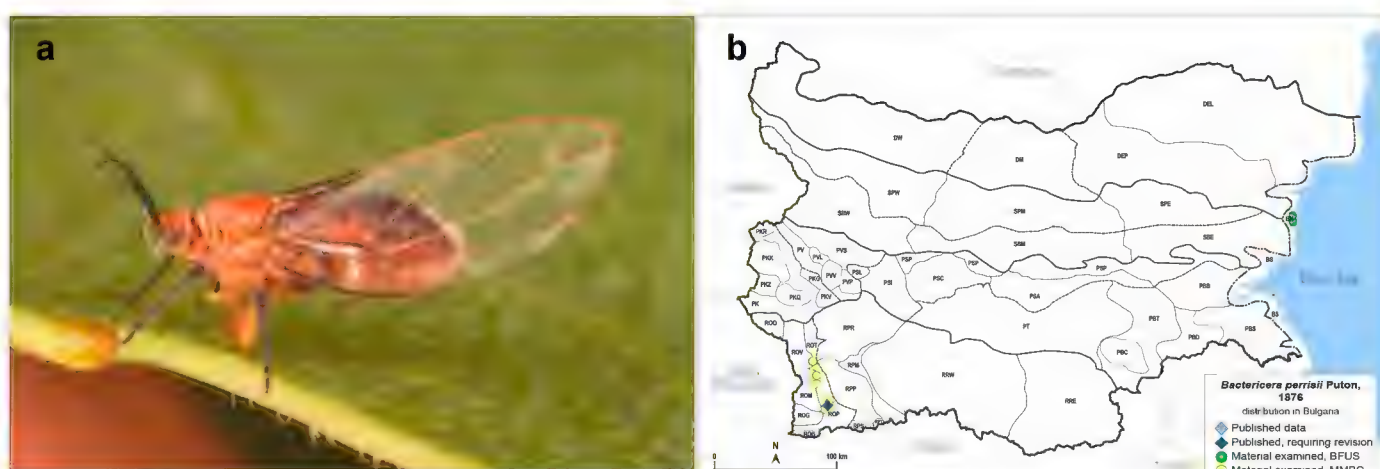


Figure 103.

Bactericera perrisii Puton, 1876.

a: *Bactericera perrisii*, adult female; [doi](#)

b: Distribution of *Bactericera perrisii* in Bulgaria. [doi](#)

Feeds on: In Bulgaria, we collected adults on *Artemisia campestris* L., which is a confirmed host plant (Lauterer 1982, Burckhardt and Lauterer 1997b).

Distribution: General distribution. Southern, central and south-eastern Europe, Caucasus, Middle East, Central Asia, southern Siberia, Mongolia. **Distribution in Bulgaria** (Fig. 103b). Published records: ROP (Głowacka 1989). Material examined: BN, ROM, ROP, ROV.

***Bactericera striola* (Flor, 1861)**

Diagnosis: Adult (Fig. 104a) and fifth-instar immature. Ossiannilsson (1992).

Feeds on: In Bulgaria, collected on *Salix* sp. (Głowacka and Harizanov 1983). Oligophagous on several *Salix* spp. (Ossiannilsson 1992, Burckhardt and Lauterer 1997b, Percy and Cronk 2020).

Distribution: General distribution. Europe, Caucasus, Central Asia (Gegechkori and Loginova 1990), southern Siberia, Mongolia. **Distribution in Bulgaria** (Fig. 104b).

Published records: PVS, RRW (Joakimov 1909, Glowacka and Harizanov 1983).
Material examined: RPP, RPR.

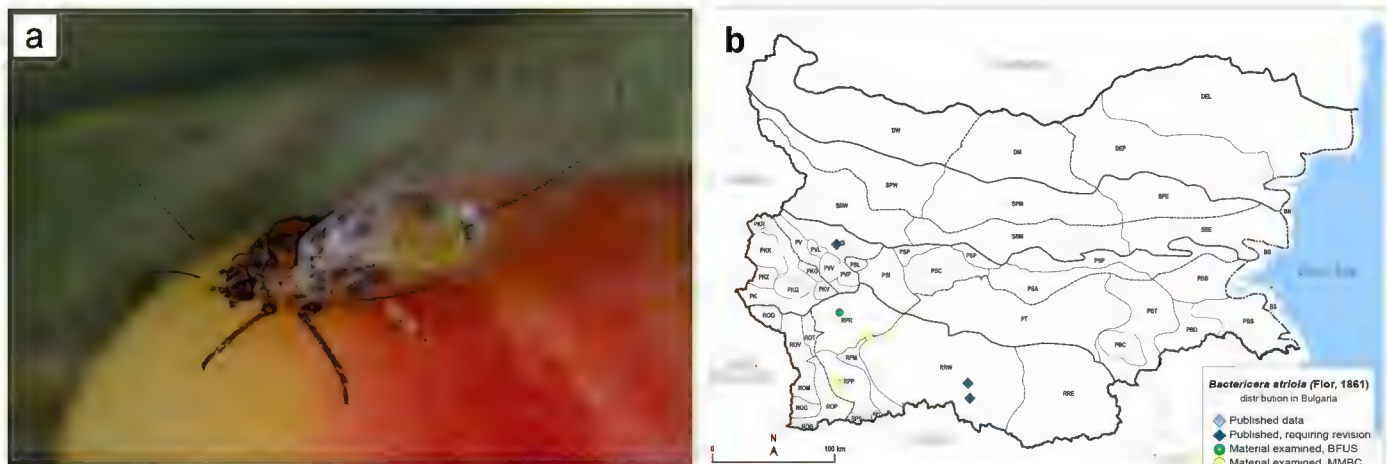


Figure 104.

Bactericera striola (Flor, 1861).

a: *Bactericera striola*, adult female; [doi](#)

b: Distribution of *Bactericera striola* in Bulgaria. [doi](#)

Bactericera trigonica Hodkinson, 1981

Diagnosis: Adult (Fig. 105a) and fifth-instar immature. Burckhardt and Freuler (2000).

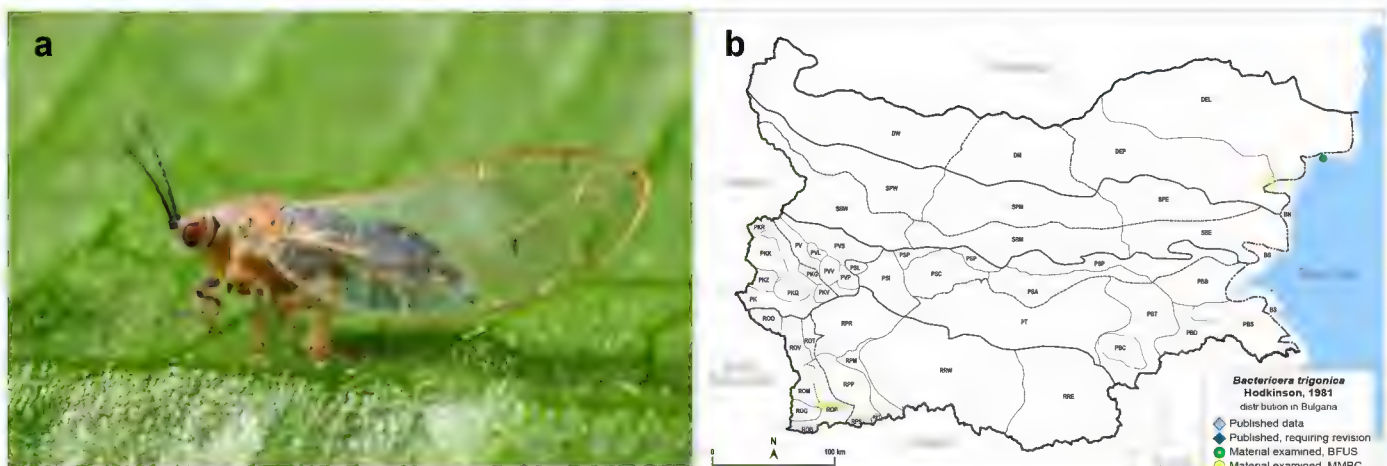


Figure 105.

Bactericera trigonica Hodkinson, 1981.

a: *Bactericera trigonica*, adult female; [doi](#)

b: Distribution of *Bactericera trigonica* in Bulgaria. [doi](#)

Distribution: General distribution. Southern and Central Europe, North Africa, Middle East. **Distribution in Bulgaria** (Fig. 105b). Material examined: BN, ROP

Notes: New record for Bulgaria.

Feeds on: Oligophagous on *Cirsium* spp. (Ossiannilsson 1992). In Bulgaria, we collected adults on *Cirsium appendiculatum* Griseb., which is a probable host plant.

Distribution: General distribution. Europe. **Distribution in Bulgaria** (Fig. 107b). Published records: RPP, RRW (Harizanov and Lauterer 1968, Klimaszewski 1970, Głowacka and Harizanov 1983: all as *Trioza viridula* auct. nec Zetterstedt, 1828; Głowacka (1989)). Material examined: PKQ, ROV, RPP, RPR.

***Dyspersa kantshavelii* (Gegechkori, 1977)**

Diagnosis: Adult (Fig. 108a, b, c, d, e). We provide here photos and drawings of the diagnostic characters, based on specimens collected in Bulgaria. The specimens correspond well with the original description (Gegechkori 1977). *Dyspersa kantshavelii* resembles *D. agrophila* (Löw, 1888), *D. cirsii*, *D. flixiana* (Burckhardt & Lauterer, 2002) and *D. viridula* (Zetterstedt, 1828) in the size, colouration, genal processes, forewing venation and general structure of the male and female terminalia, but differs from them in the shape of the paramere (its posterior margin is almost evenly convex and the anterior margin is more shallowly incised subapically in lateral view and the apical process is shorter than in all other species), the distal segment of the aedeagus (its apical dilation is subglobular and bearing a small tooth and incision anteriorly/ventrally in lateral view, whereas this tooth and incision is larger in the other species) and the female terminalia (the apical processes of the proctiger and the subgenital plate is similar to *D. viridula*, but slightly shorter than in *D. agrophila* and longer than in *D. cirsii* and *D. flixiana*) (Fig. 108e, see also Ossiannilsson (1992), Burckhardt and Lauterer (2002b)).

Feeds on: The host plant of *D. kantshavelii* is unknown. Based on its morphology, it belongs to a complex of species that are associated with thistles (*Cirsium* spp.) (Ossiannilsson 1972, Burckhardt and Lauterer 2002b).

Distribution: General distribution. Caucasus (Armenia, Azerbaijan, Georgia), Turkey. **Distribution in Bulgaria** (Fig. 108f). Material examined: ROP, RPP, RRW.

Notes: New record for Bulgaria and Europe. *Dyspersa kantshavelii* is a little-known species that was previously only known from the mountains of the Caucasus and north-eastern Turkey (Gegechkori 1977, Gegechkori 1984, Burckhardt 1988). In Bulgaria, the species was collected by P. Lauterer in several places in the Pirin mountains, mostly at high altitudes (1600–2500 m a.s.l.); there is also a record from the Western Rhodopi.

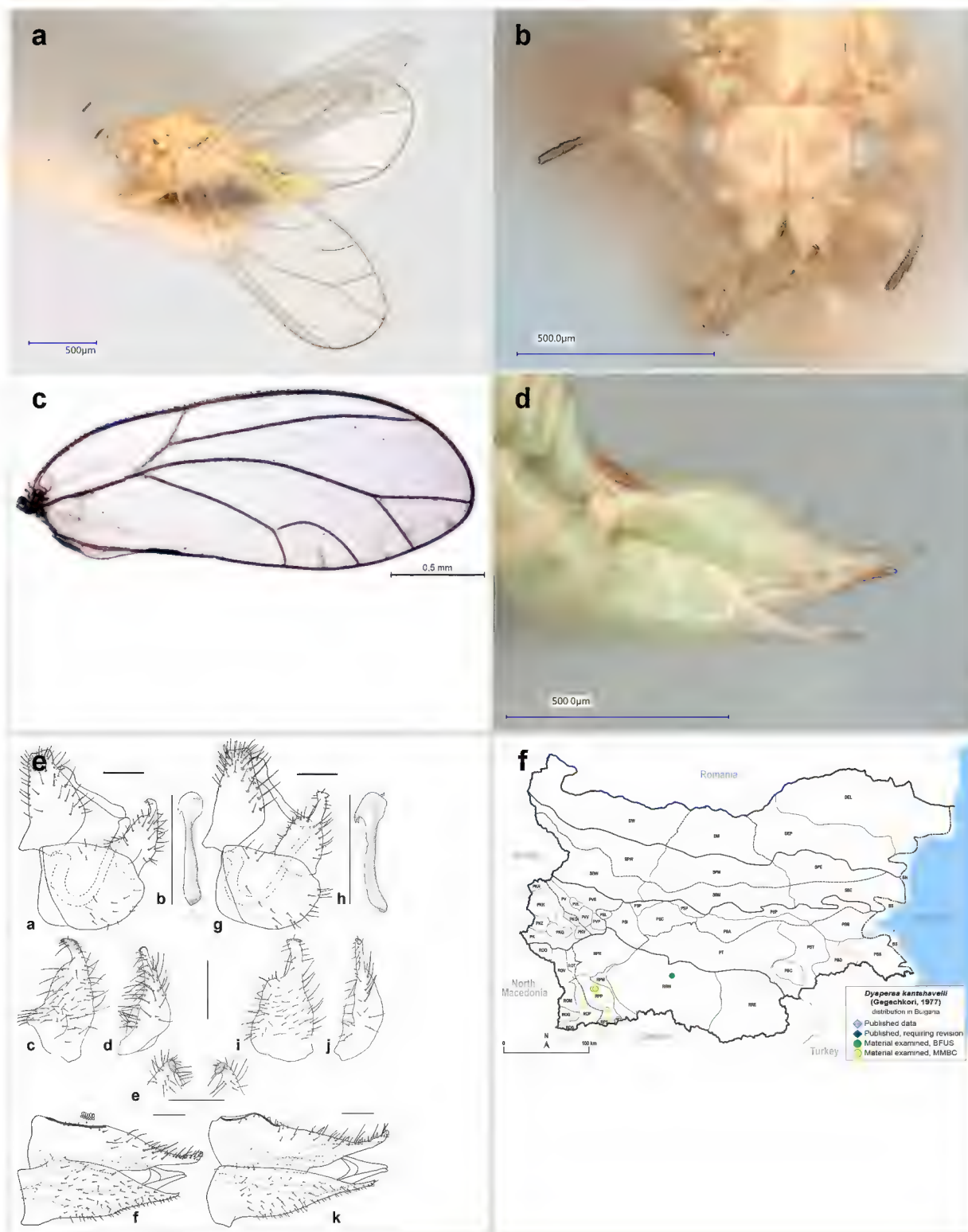


Figure 108.

Dyspersa kantshavelii (Gegechkori, 1977).

a: *Dyspersa kantshavelii*, adult female; [doi](#)

b: *Dyspersa kantshavelii*, head, oblique frontal view; [doi](#)

c: *Dyspersa kantshavelii*, forewing; [doi](#)

d: *Dyspersa kantshavelii*, female terminalia, lateral view; [doi](#)

e: Comparison between male and female terminalia of *Dyspersa kantshavelii* (specimen from Bulgaria) and *D. agrophila* (Löw, 1888) (specimen from the Czechia). ***D. kantshavelii***, a – male terminalia, lateral view; b – distal segment of aedeagus, lateral view; c – paramere, inner surface, lateral view; d – paramere, posterior view; e – paramere, dorsal view; f – female terminalia, lateral view; ***D. agrophila***, g – male terminalia, lateral view; h – distal segment of aedeagus, lateral view; i – paramere, inner surface, lateral view; j – paramere, posterior view; k – female terminalia, lateral view. Scale bars: 0.1 mm; [doi](#)

f: Distribution of *Dyspersa kantshavelii* in Bulgaria. [doi](#)

Dyspersa mesembrina (Burckhardt, 1986)

Diagnosis: Adult and fifth-instar immature. Burckhardt (1986).

Distribution: General distribution. Mountains in Central and south-eastern Europe (Switzerland, Italy, Slovakia and Bulgaria). **Distribution in Bulgaria** (Fig. 109). Published records: SBM (Klimaszewski (1970), as *Trioza pallida*; Burckhardt 1986).

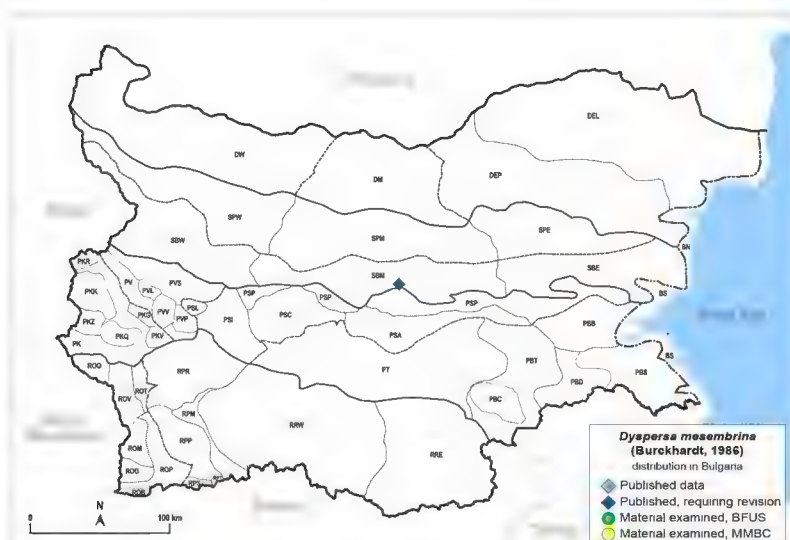


Figure 109. [doi](#)

Distribution of *Dyspersa mesembrina* (Burckhardt, 1986) in Bulgaria.

Notes: According to Burckhardt (1986), the specimens recorded by Klimaszewski (1970) from Bulgaria as "*Trioza pallida*" are *T. mesembrina*.

Dyspersa munda (Foerster, 1848)

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 110). Published records: RPP (Głowacka 1989). Material examined: PKQ, ROB, RPP, RPR.

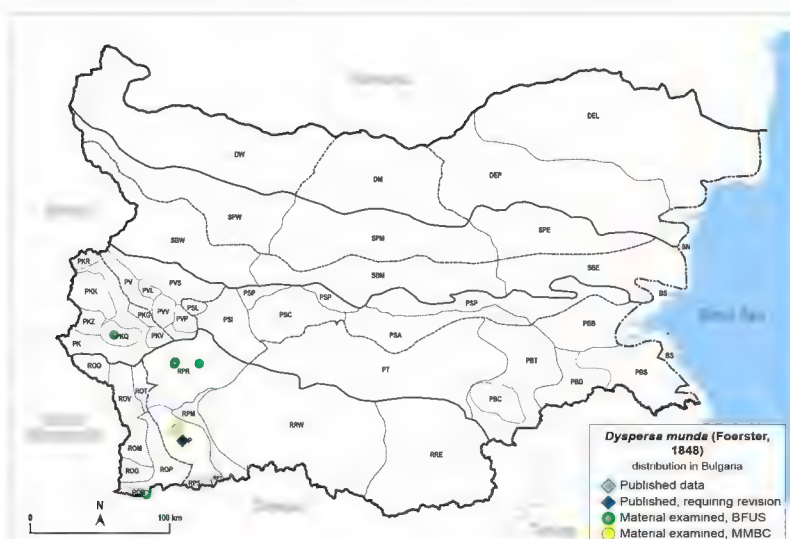


Figure 110. [doi](#)

Distribution of *Dyspersa munda* (Foerster, 1848) in Bulgaria.

Dyspersa pallida (Haupt, 1935)

Diagnosis: Adult and fifth-instar immature. Burckhardt (1986), Ossiannilsson (1992), Burckhardt and Freuler (2000), as *Trioza anthrisci* Burckhardt, 1986.

Distribution: General distribution. Europe, Turkey, Russia (European part, Siberia). **Distribution in Bulgaria** (Fig. 111). Published records: RRW (Głowacka and Harizanov 1983). Material examined: RPP, RPR.

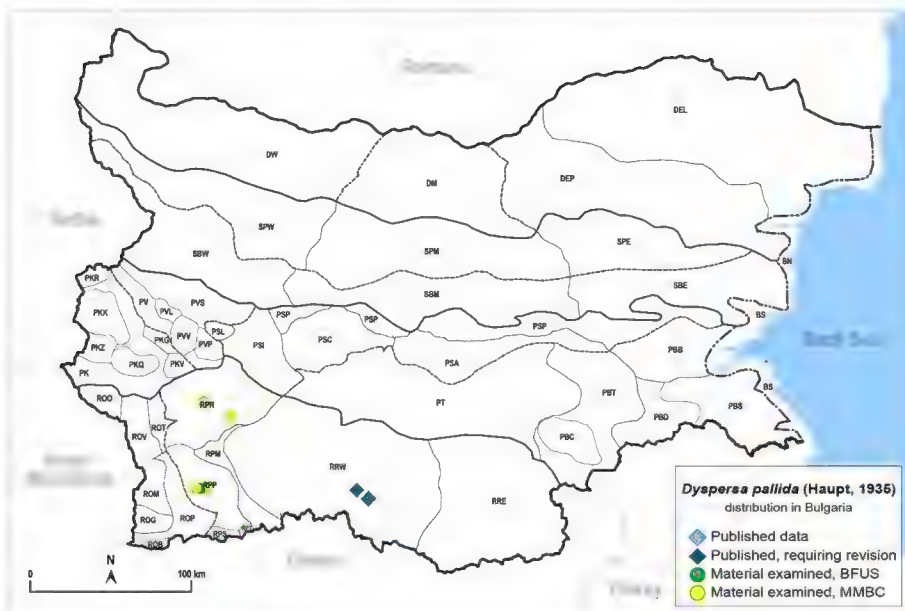


Figure 111. [doi](#)

Distribution of *Dyspersa pallida* (Haupt, 1935) in Bulgaria.

Genus *Eryngiofaga* Klimaszewski, 1968

Eryngiofaga babugani (Loginova, 1964)

Diagnosis: Adult (Fig. 112a). Loginova (1977).

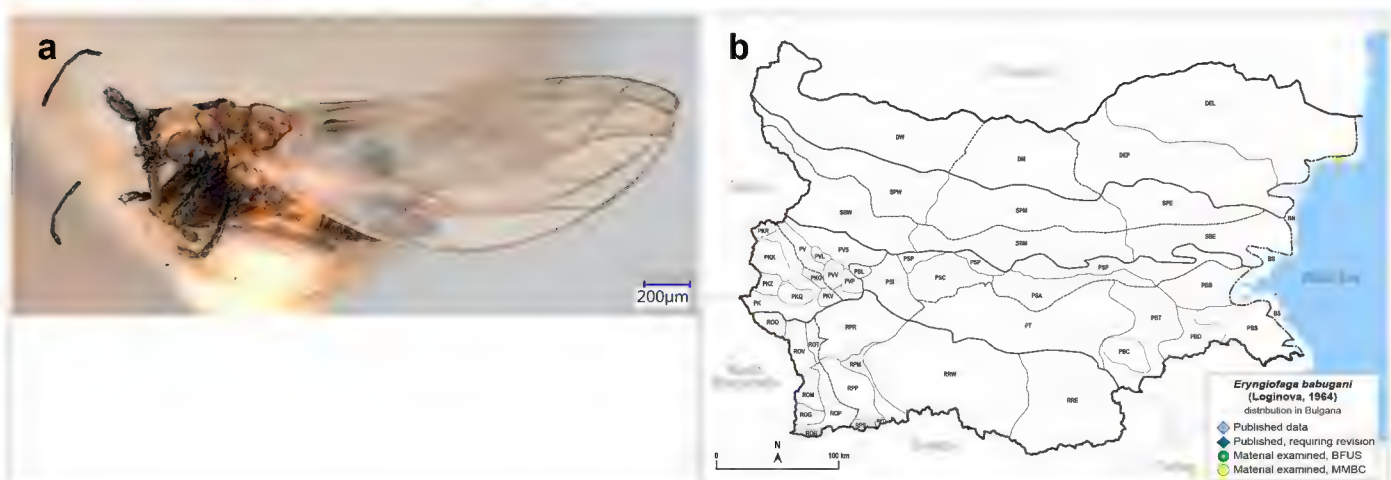


Figure 112.

Eryngiofaga babugani (Loginova, 1964).

a: *Eryngiofaga babugani*, adult female; [doi](#)

b: Distribution of *Eryngiofaga babugani* in Bulgaria. [doi](#)

Distribution: General distribution. South-eastern Europe (Ukraine: Crimea), Caucasus (Russia: Dagestan) (Loginova 1977). The species identity of specimens from China (Li 2011) is doubtful. **Distribution in Bulgaria** (Fig. 112b). Material examined: BN.

Notes: New record for Bulgaria and the Balkan Peninsula. Only a single female was collected by P. Lauterer on 23 July 1987 in a dry grassland vegetation on limestone on the Black Sea coast (10–50 m a.s.l.). This specimen has an ochreous vertex and thorax, extensive dark brown pattern on thorax and almost completely dark brown to black abdomen, legs and antennae (except the antennal segment 3 which is dark yellow), a small body size (total length including forewings folded over the body 2.3 mm), short antennae (0.83 mm), a high ratio of the length of the antennal segments 3 and 4 (4.3), relatively long genal processes (almost as long as the vertex in frontal view), forewing with a quite short and convex vein Rs, clear or only slightly whitish membrane and a small dark spot and a darkened anal vein in the middle of the clavus and a slightly concave female proctiger posterior to the circumanal pore ring. It resembles *E. babugani* in these characters, but the measurements do not match the description by Loginova (1977) perfectly and more specimens, especially males, are needed to confirm the identification.

Eryngiofaga dlabolai (Vondráček 1957)

Diagnosis: Adult (Fig. 113a). Vondráček (1957b), Loginova (1977).

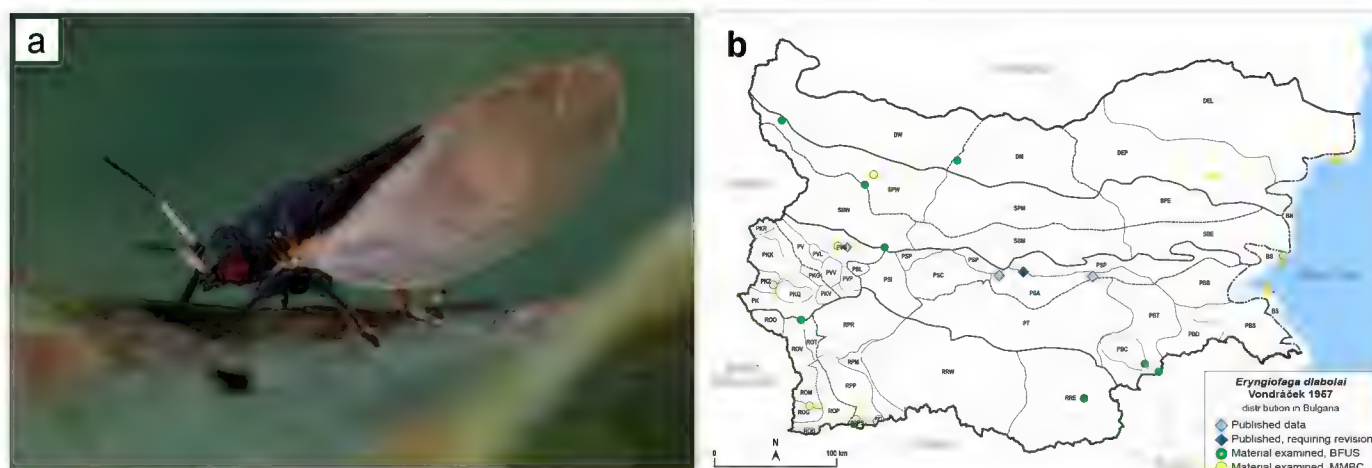


Figure 113.

Eryngiofaga dlabolai (Vondráček 1957).

a: *Eryngiofaga dlabolai*, adult female; [doi](#)

b: Distribution of *Eryngiofaga dlabolai* in Bulgaria. [doi](#)

Feeds on: We collected adults and immatures on *Eryngium campestre* L., which is a confirmed host plant (Loginova 1977).

Distribution: General distribution. Central and south-eastern Europe, Caucasus. **Distribution in Bulgaria** (Fig. 113b). Published records: PSA, PSP (Joakimov (1909), as "*Trioza mesotela*"; Pramatarova et al. 2021, Pramatarova et al. 2023). Material

examined: BN, BS, DEP, DM, PBC, PBT, PKZ, PSA, PVS, ROM, ROV, RPS, RRE, SBW, SPW.

Notes: The record of *Eryngiofaga mesomela* (Flor, 1861) (cited as '*Trioza mesotela* Flor') from Bulgaria by Joakimov (1909) is here attributed to *E. dlabolai*. On the basis of numerous recently collected material from different regions, *E. dlabolai* seems to be the only *Eryngiofaga* species associated with *Eryngium* in Bulgaria.

Genus *Heterotrioza* Dobreanu & Manolache, 1960

Heterotrioza chenopodii (Reuter, 1876)

Diagnosis: Adult (Fig. 114a, b) and fifth-instar immature. Ossiannilsson (1992).

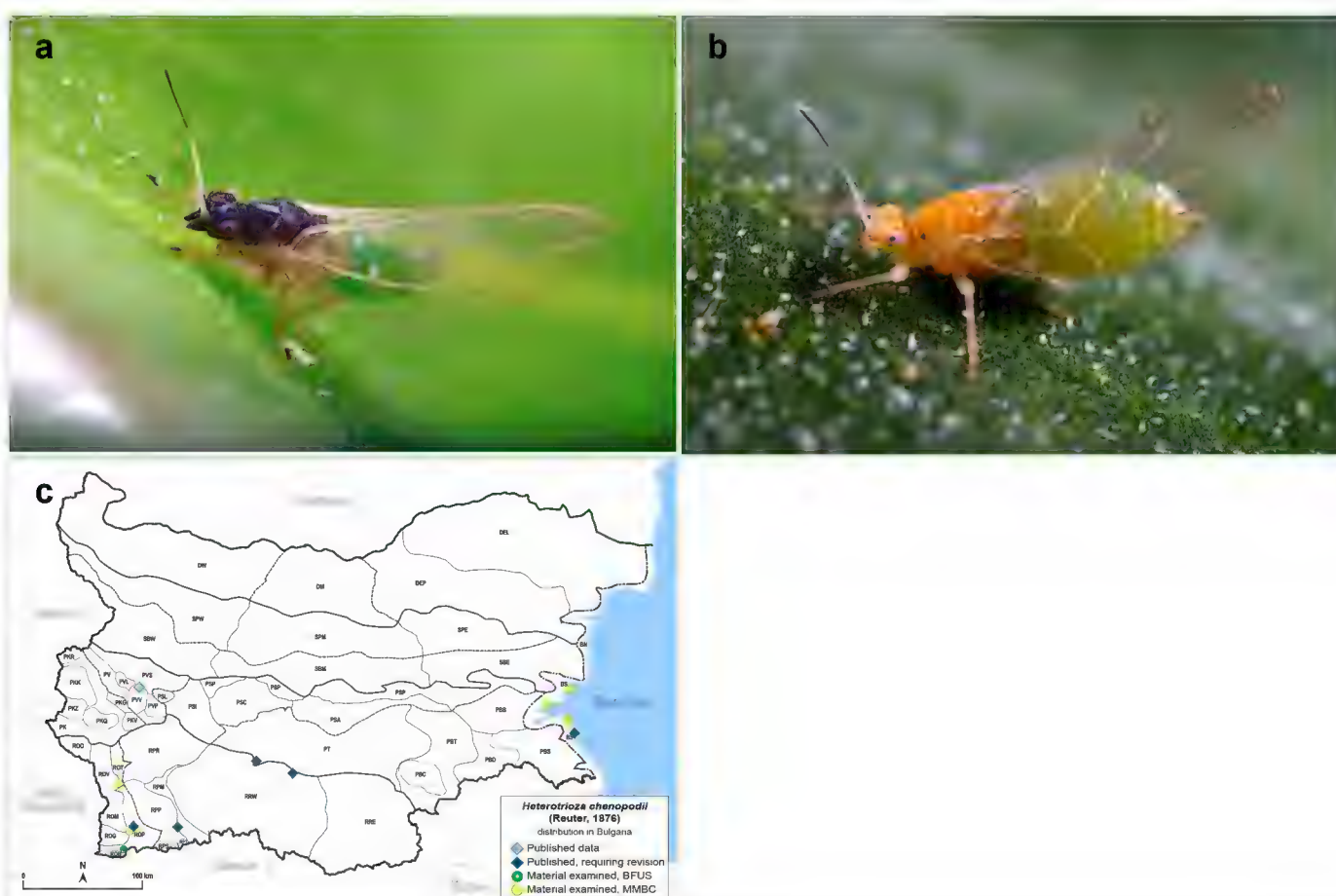


Figure 114.

Heterotrioza chenopodii (Reuter, 1876).

a: *Heterotrioza chenopodii*, adult male; [doi](#)

b: *Heterotrioza chenopodii*, adult female; [doi](#)

c: Distribution of *Heterotrioza chenopodii* in Bulgaria. [doi](#)

Feeds on: Oligophagous on Amaranthaceae (Lauterer 1982, Ossiannilsson 1992). In Bulgaria, adults were collected on *Atriplex* spp. by Głowacka and Harizanov (1983) and Głowacka (1989), on *Chenopodium* sp. by Harizanov and Lauterer (1968) and on *Chenopodium album* L. by the authors.

Distribution: General distribution. Palaearctic, India, alien in North and South America and Hawaii. **Distribution in Bulgaria** (Fig. 114c). Published records: BS, PT, PVV, ROP, RPP, RRW (Klimaszewski (1965), as *Trioza obliqua horvathi*; Harizanov and Lauterer (1968), as *Trioza chenopodii*; Głowacka and Harizanov (1983), as *Heterotrioza obliqua horvathi*; Głowacka (1989), Pramatarova et al. (2023)). Material examined: BS, ROM, ROV, ROB, ROP.

Heterotrioza dichroa (Scott, 1879)

Diagnosis: Adult. Loginova (1964), partly as *Trioza atriplicina*; Lauterer (1965).

Feeds on: In Bulgaria, adults were collected on *Atriplex tatarica* L., which is a confirmed host plant (Lauterer 1991).

Distribution: General distribution. Central and south-eastern Europe, Caucasus, Middle East, Central Asia. **Distribution in Bulgaria** (Fig. 115). Published records: Bulgaria, without locality data (Lauterer 1991). Material examined: BN, BS.

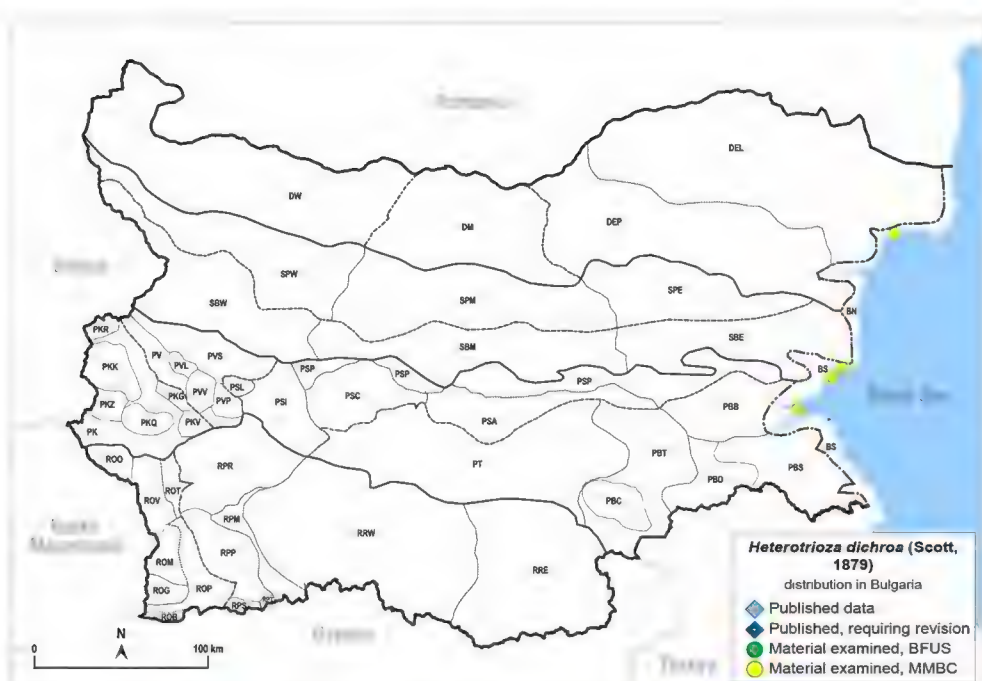


Figure 115. [doi](#)

Distribution of *Heterotrioza dichroa* (Scott, 1879) in Bulgaria.

Notes: Lauterer (1991) mentioned only briefly that he collected *H. dichroa* in Bulgaria on *Atriplex tatarica*. Here, we give more details on his material and confirm the presence of *H. dichroa* in Bulgaria.

Heterotrioza kochiae (Gegechkori, 1975)

Diagnosis: Adult (Fig. 116a, c, d, e). Originally described (as *Trioza kochiae*) by Gegechkori (1975) from Georgia and later also recorded from other countries of the Caucasus. Gegechkori (1975) considered *H. kochiae* to be similar and closely related to *Trioza eurotiae* Loginova, 1960 (now *Heterotrioza eurotiae*), which occurs

sympatrically with *H. kochiae* in the Caucasus, but has also been recorded from Kazakhstan, Central Asia, Mongolia and Iran (Loginova 1960, Gegechkori and Loginova 1990, Burckhardt and Lauterer 1993). However, Gegechkori (1975) did not give any characters to distinguish the two species and his illustrations are not detailed enough, which makes the identification of *H. kochiae* difficult. Here, we provide habitus photographs and illustrations of the male and female terminalia of specimens of *H. kochiae* from Bulgaria, collected from *Bassia prostrata* on the Black Sea coast in summer (15 July 1973, P. Lauterer leg.) (Fig. 116a, c, d, e), which agree well with the original description, except for a smaller size (forewing length, in mm: 1.38–1.44 in males ($n = 3$) and 1.46–1.56 in females ($n = 3$) from Bulgaria, while Gegechkori (1975) reported 1.59–1.67 in males and 1.62–1.70 in females for the type series from Georgia, collected on 1 June). We consider this size difference as intraspecific variation. We compared the Bulgarian specimens of *H. kochiae* with the original description of *H. eurotiae* and with material from Kazakhstan, identified as *H. eurotiae* by Loginova and deposited in the MMBC (1 male, 2 females, Kokterek sands, 10 km Karatal, Zaisan District, 9 July 1962, *Eurotia ceratoides*, leg. Loginova). On the basis of this comparison, we can confirm that *H. kochiae* and *H. eurotiae* are similar in body colouration and the general structure of the head, forewings, female and male terminalia and especially the aedeagus. *Heterotrioza kochiae* is smaller than *H. eurotiae* (in the latter species, the forewing length in mm according to Loginova (1960) is 1.80–1.90 in males, 1.95–2.00 in females; 1.78 in the male and 1.88–2.08 in the females from MMBC). *Heterotrioza kochiae* differs from *H. eurotiae* mainly by a relatively broader and shorter paramere (in lateral view) with a less pronounced postero-apical tooth (Fig. 116c) and by the female proctiger and subgenital plate, both of which are slightly broader apically (in lateral view) than in *H. eurotiae* and the female proctiger is also straight dorsally (in females of *H. eurotiae*, the proctiger is distinctly concave dorsally, Fig. 116d). Both species probably also differ in their host plants: while *H. kochiae* was only reported from *Bassia prostrata*, *H. eurotiae* was described from a number of specimens found on *Krasheninnikovia ceratoides* (L.) Gueldenst. (= *Eurotia ceratoides* (L.) C.A. Mey, Amaranthaceae) and most of the later records are also from this plant species (Loginova 1960, Gegechkori and Loginova 1990), with the exception of a record from '*Kochia* sp.' (= *Bassia* sp.) from Mongolia (Loginova 1972) and a record from '*Kochia cana*' (= *Bassia stellaris* (Moq.) Bornm.) from Iran (Burckhardt and Lauterer 1993), which should be re-examined.

Feeds on: In Bulgaria, adults were collected on *Bassia prostrata* (L.) Beck (= *Kochia prostrata* (L.) Schrad., Amaranthaceae), which has been listed as a host plant (Gegechkori 1984, Gegechkori and Loginova 1990).

Distribution: General distribution. Bulgaria, Caucasus (Azerbaijan, Armenia, Georgia, Russia: Stavropol Region) (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 116b). Material examined: BN.

Notes: New record for Bulgaria and Europe.

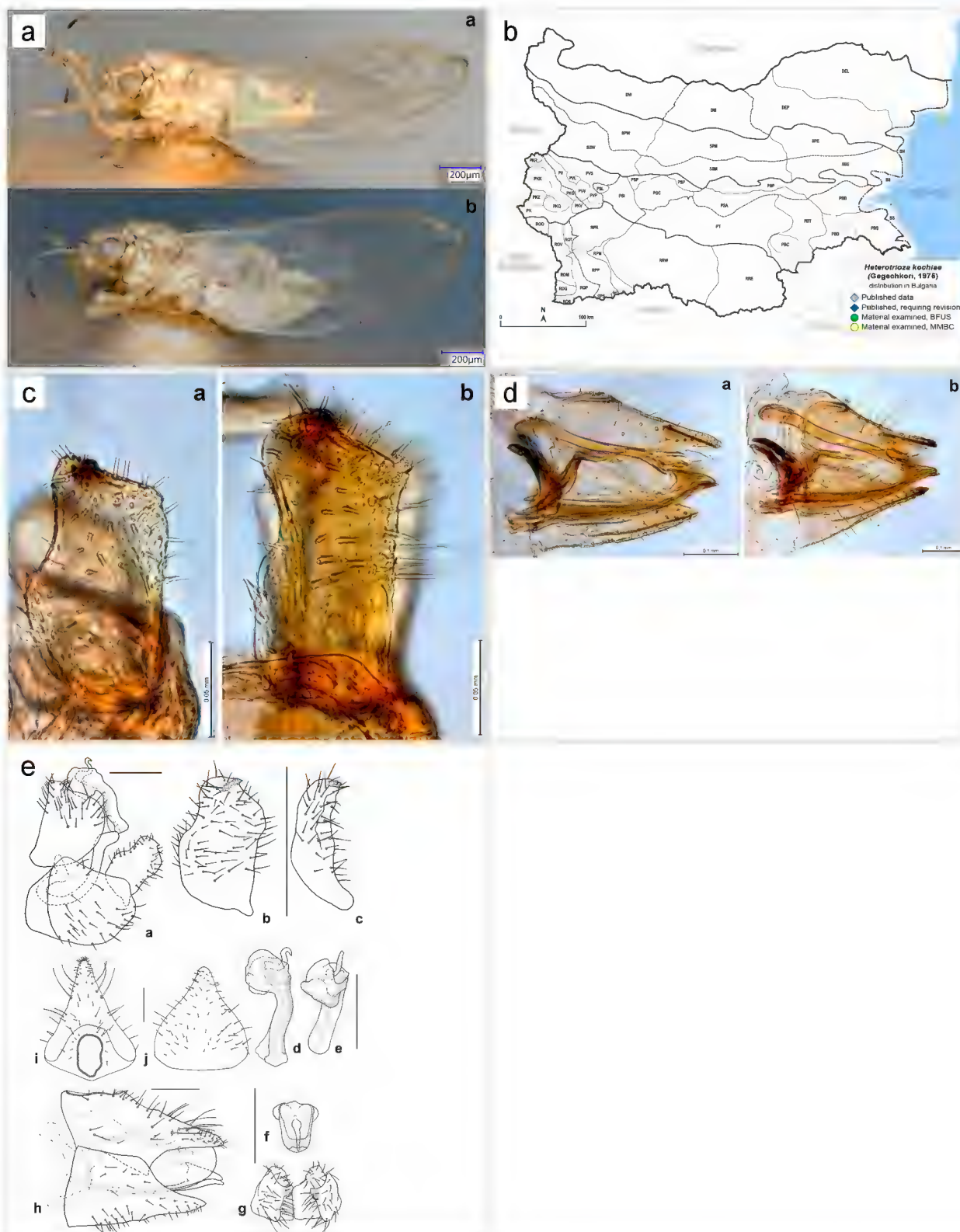


Figure 116.

Heterotrioza kochiae (Gegechkori, 1975).

- a:** *Heterotrioza kochiae*: **a.** adult male; **b.** adult female; [doi](#)
- b:** Distribution of *Heterotrioza kochiae* in Bulgaria; [doi](#)
- c:** Comparison between male parameres of **a.** *Heterotrioza kochiae* from Bulgaria and **b.** *Heterotrioza eurotiae* Loginova, 1960 from Kazakhstan; [doi](#)
- d:** Comparison between female terminalia of **a.** *Heterotrioza kochiae* from Bulgaria and **b.** *Heterotrioza eurotiae* Loginova, 1960 from Kazakhstan; [doi](#)
- e:** Male and female terminalia of *Heterotrioza kochiae*. **a.** male terminalia in lateral view; **b.** paramere in lateral view; **c.** paramere in posterior view; **d.** distal segment of aedeagus in lateral view; **e.** distal segment of aedeagus in ventral view; **f.** distal segment of aedeagus in dorsal view; **g.** apices of parameres in dorsal view; **h.** female terminalia in lateral view; **i.** female proctiger in dorsal view; **j.** female subgenital plate in ventral view. [doi](#)

Genus *Lauritrioza* Conci & Tamanini, 1986

Lauritrioza alacris (Flor, 1861)

Diagnosis: Adult (Fig. 117a) **and fifth instar immature**. Conci and Tamanini (1985b), Ossiannilsson (1992).

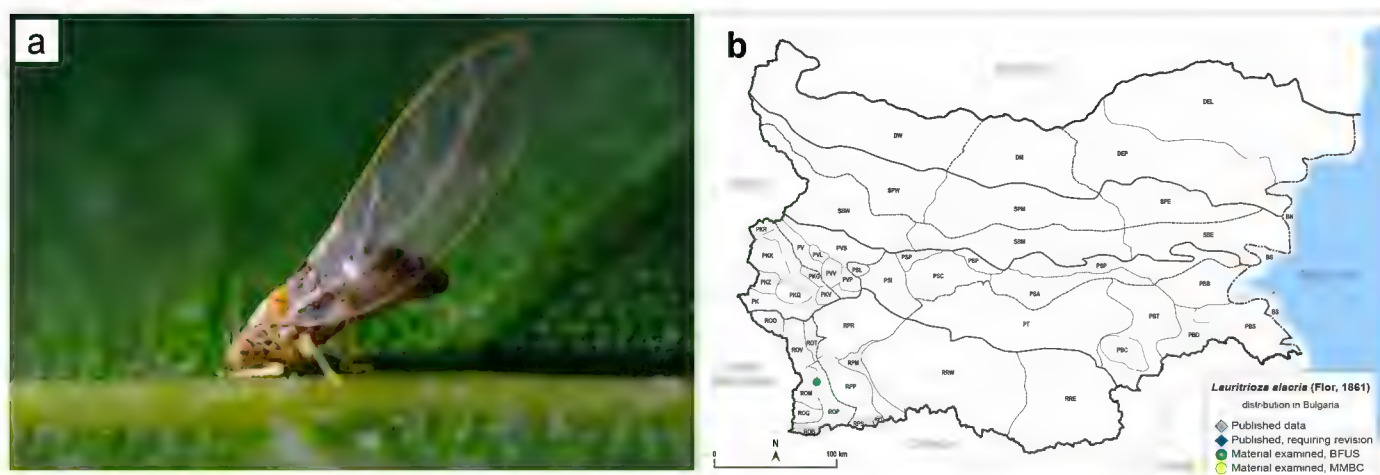


Figure 117.

Lauritrioza alacris (Flor, 1861).

a: *Lauritrioza alacris*, adult male; [doi](#)

b: Distribution of *Lauritrioza alacris* in Bulgaria. [doi](#)

Feeds on: *Laurus nobilis* L., the only host plant of *L. alacris* (Conci and Tamanini 1985b, Bastin et al. 2023), is not native to Bulgaria (POWO 2024), but it is a widespread ornamental plant that has escaped from cultivation and naturalised in south-eastern Bulgaria along the Black Sea coast (Fidan et al. 2019, Vladimirov and Petrova 2023). Our record of adults of *L. alacris* in south-western Bulgaria comes from a laurel plant cultivated in a private garden.

Distribution: General distribution. Native to the Mediterranean parts of southern Europe, North Africa and Middle East; introduced with the host plant to Central and northern Europe, Great Britain, Ireland, Ukraine (Crimea), Caucasus and North and South Americas. **Distribution in Bulgaria** (Fig. 117b). Material examined: ROM.

Notes: New record for Bulgaria.

Genus *Phylloplecta* Riley, 1884

Phylloplecta trisignata (Löw, 1886)

Diagnosis: Adult (Fig. 118a). Conci and Tamanini (1984a). **Fifth-instar immature**. Conci and Tamanini (1986).

Feeds on: Reported from *Rubus* spp. by Głowacka (1989); *Rubus* spp. are known as host plants (Conci and Tamanini 1984a, Spodek et al. 2017).

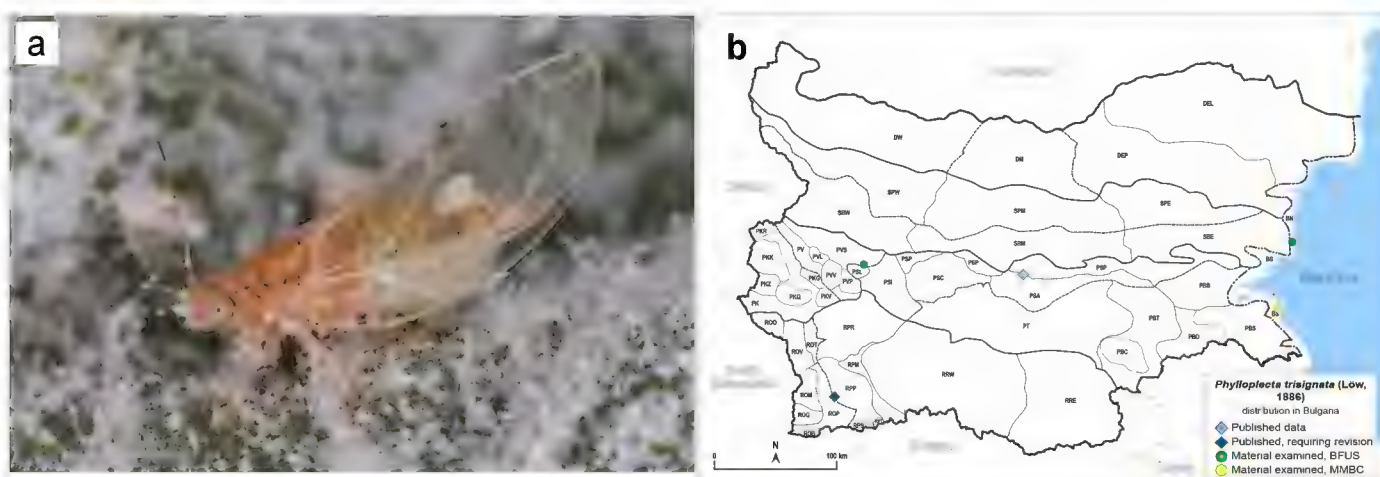


Figure 118.

Phylloplecta trisignata (Löw, 1886).

a: *Phylloplecta trisignata*, adult female; [doi](#)

b: Distribution of *Phylloplecta trisignata* in Bulgaria. [doi](#)

Distribution: General distribution. Southern Europe, Middle East. **Distribution in Bulgaria** (Fig. 118b). Published records: PSP, ROP (Joakimov 1909, Głowacka 1989, Pramatarova et al. 2023). Material examined: BN, BS, PSP, PVS.

Genus *Spanioza* Enderlein, 1926

Spanioza galii (Foerster, 1848)

Diagnosis: Adult (Fig. 119a) **and fifth-instar immature.** Burckhardt and Lauterer (2006).

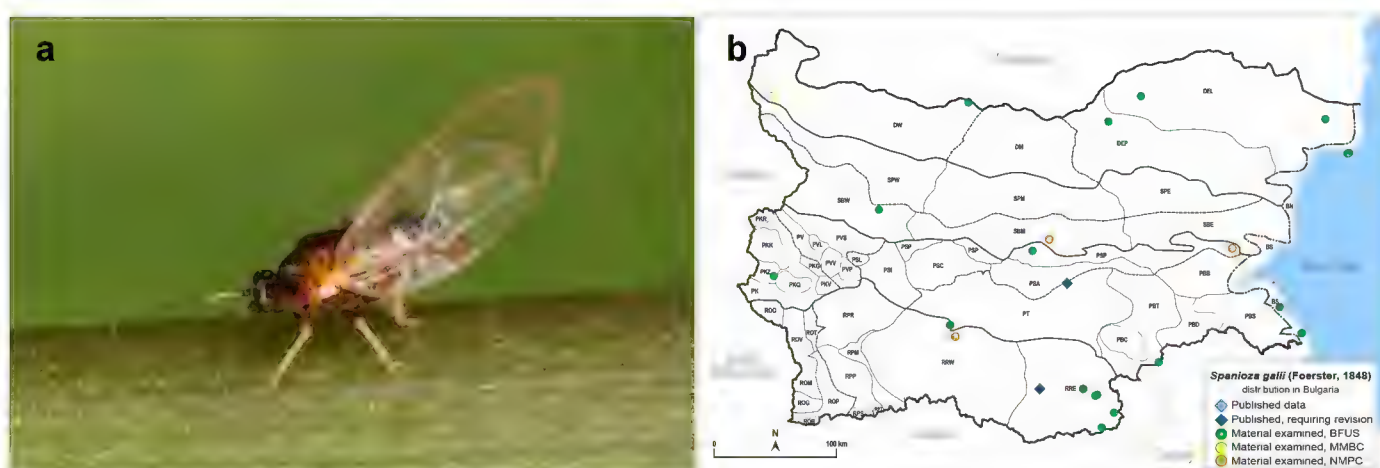


Figure 119.

Spanioza galii (Foerster, 1848).

a: *Spanioza galii*, adult female; [doi](#)

b: Distribution of *Spanioza galii* in Bulgaria. [doi](#)

Distribution: General distribution. West Palaearctic, Central Asia (Burckhardt and Lauterer 2006). **Distribution in Bulgaria** (Fig. 119b). Published records: PT, RRE (Klimaszewski 1965). Material examined: BN, BS, DEL, DEP, DW, PBB, PBT, PKZ, PSP, RRE, RRW, SBM, SBW.

Notes: The specimens of '*Trioza galii*' published by Klimaszewski (1965) should be revised as they may be *S. velutina*. The two species were only later distinguished by Burckhardt and Lauterer (2006).

Spanioza velutina (Foerster, 1848)

Diagnosis: Adult (Fig. 120a). Burckhardt and Lauterer (2006).

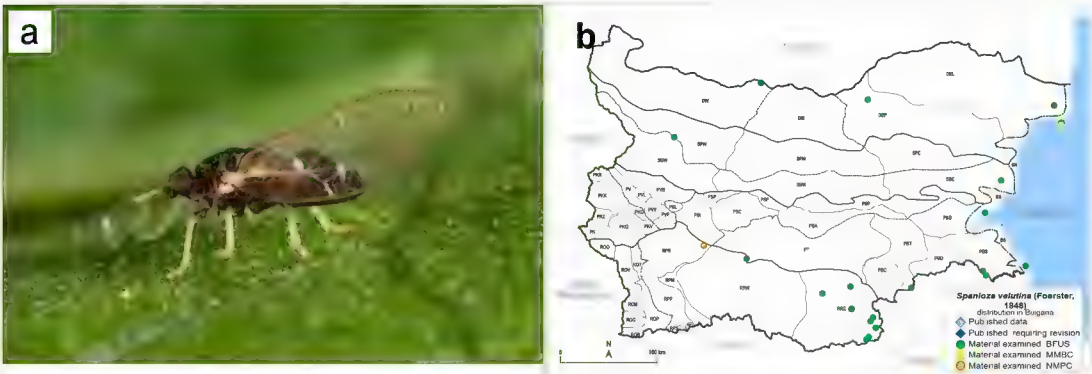


Figure 120.
Spanioza velutina (Foerster, 1848).
a: *Spanioza velutina*, adult male; [doi](#)
b: Distribution of *Spanioza velutina* in Bulgaria. [doi](#)

Distribution: General distribution. Palaearctic (Burckhardt and Lauterer 2006, Cho et al. 2022). **Distribution in Bulgaria** (Fig. 120b). Material examined: BN, BS, DEL, DEP, DW, PBS, PBT, RPR, RRE, RRW, SBE, SBW.

Notes: New record for Bulgaria.

Genus *Trichohermes* Kirkaldy, 1904

Trichohermes rhamni (Schränk, 1801)

Diagnosis: Adult (Fig. 121a) **and fifth-instar immature.** Ossiannilsson (1992).

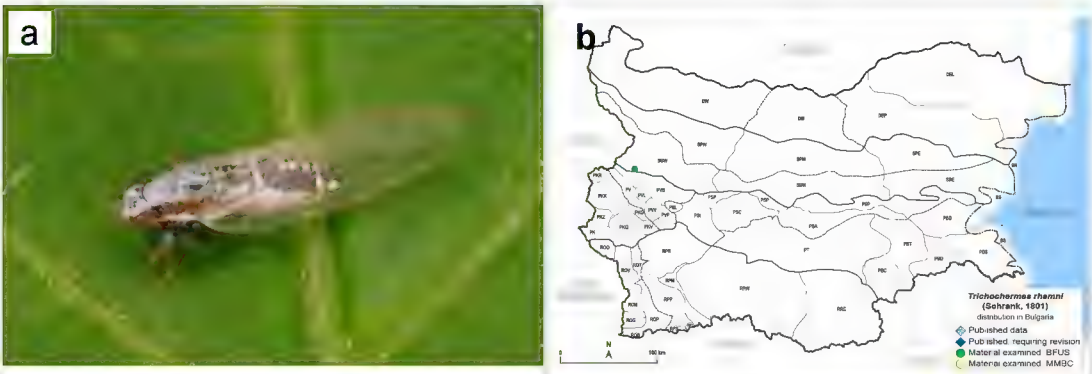


Figure 121.
Trichohermes rhamni (Schränk, 1801).
a: *Trichohermes rhamni*, adult male; [doi](#)
b: Distribution of *Trichohermes rhamni* in Bulgaria. [doi](#)

Distribution: General distribution. Europe, Caucasus, Central Asia (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 121b). Material examined: SBW.

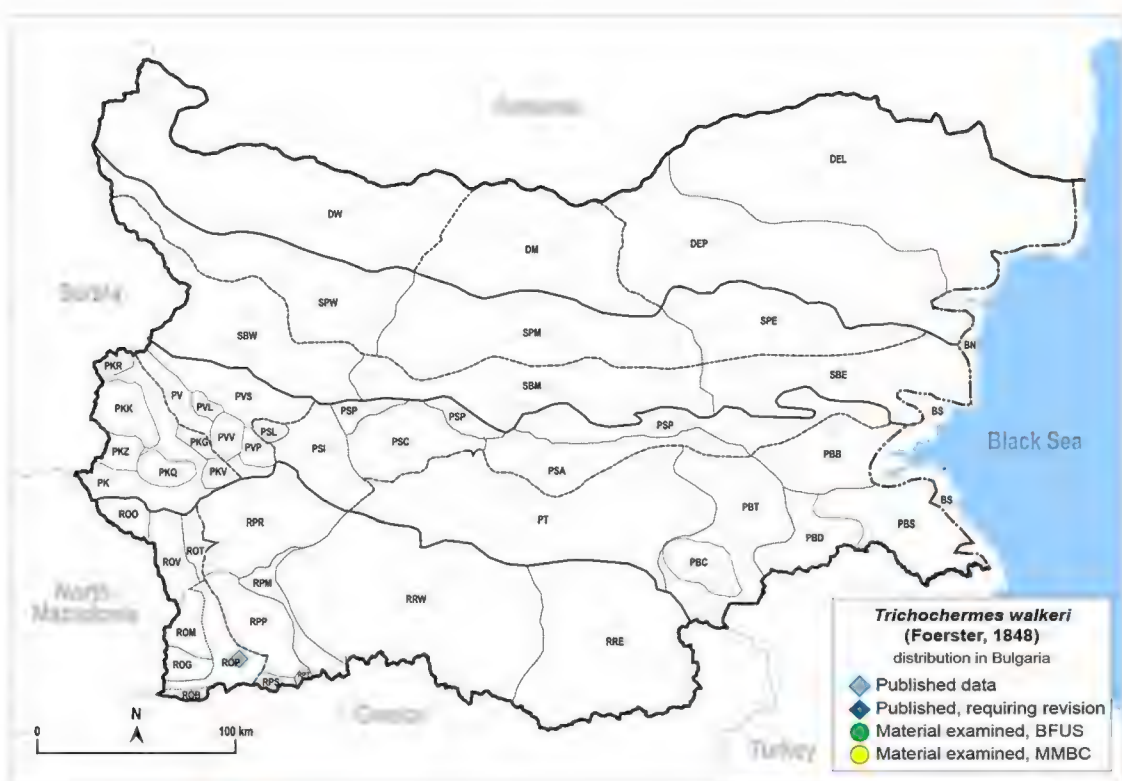
Notes: New record for Bulgaria.

***Trichohermes walkeri* (Foerster, 1848)**

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Feeds on: In Bulgaria, adults were collected on *Rhamnus cathartica* L. (Kuznetsova et al. 1995, Labina et al. 2014), which is a confirmed host plant (Ossiannilsson 1992).

Distribution: General distribution. Europe, Caucasus, Central Asia (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 122). Published records: ROP (Labina et al. 2014).

Figure 122. 

Distribution of *Trichoermes walkeri* (Foerster, 1848) in Bulgaria.

Genus *Trioza* Foerster, 1848

***Trioza cerastii* (Linnaeus, 1758)**

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Distribution: General distribution. Europe. **Distribution in Bulgaria** (Fig. 123). Published records: RRW (Głowacka and Harizanov 1983). Material examined: RPP, RPR, SBW.

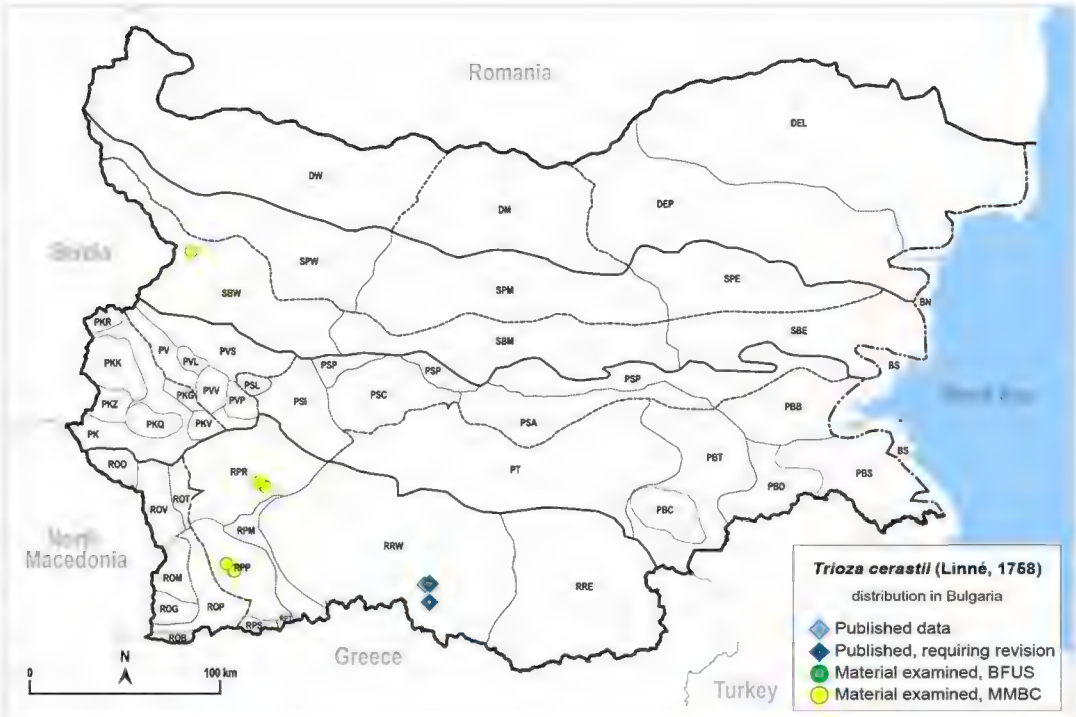


Figure 123. [doi](#)
Distribution of *Trioza cerastii* (Linnaeus, 1758) in Bulgaria.

***Trioza flavipennis* Foerster, 1848**

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Distribution: General distribution. Europe. **Distribution in Bulgaria** (Fig. 124).
Material examined: RPR, RRW, ROP.

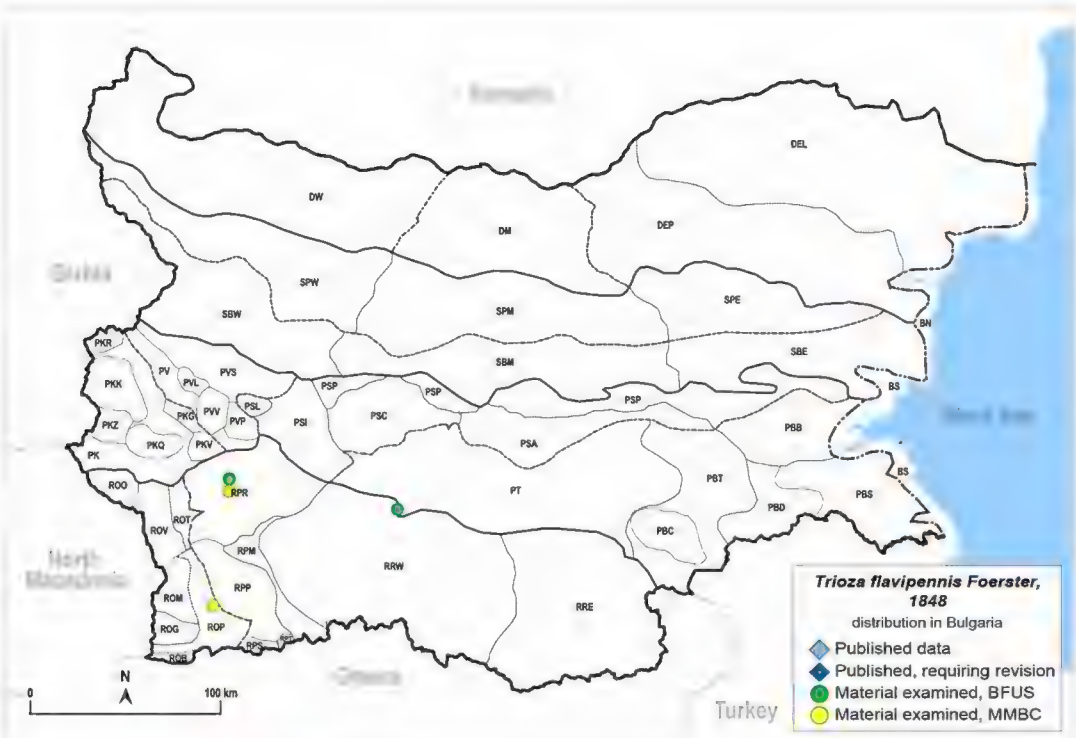


Figure 124. [doi](#)
Distribution of *Trioza flavipennis* Foerster, 1848 in Bulgaria.

Notes: New record for Bulgaria.

Trioza megacerca Burckhardt, 1983

Diagnosis: Adult. Burckhardt (1983).

Distribution: General distribution. Southern parts of Central Europe and the Balkans. **Distribution in Bulgaria** (Fig. 125). Published records: ROP (Lauterer and Malenovský 2002). Material examined: RPR, ROP.

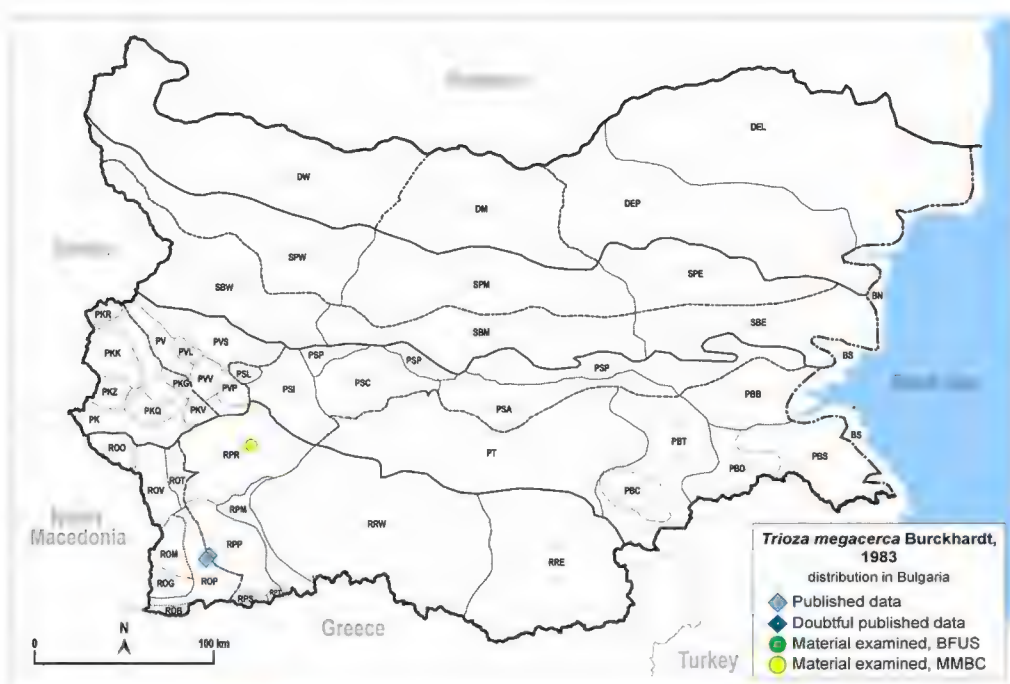


Figure 125. [doi](#)

Distribution of *Trioza megacerca* Burckhardt, 1983 in Bulgaria.

Trioza neglecta Loginova, 1978

Diagnosis: Adult (Fig. 126a). Doboreanu and Manolache (1962), as *Trioza elaeagni*; Loginova (1978).

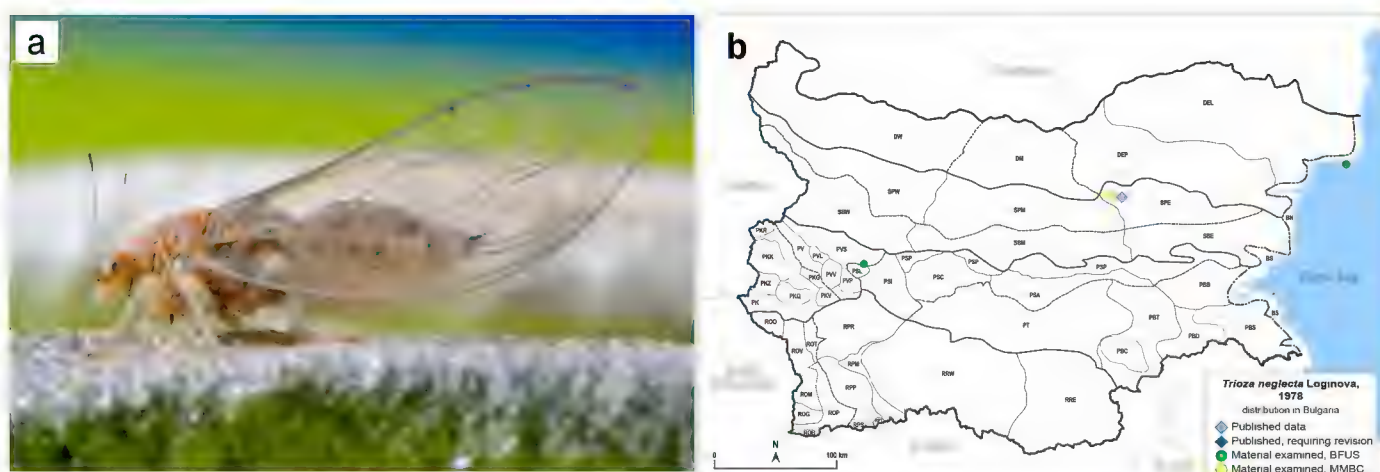


Figure 126.

Trioza neglecta (Loginova, 1978).

a: *Trioza neglecta*, adult female; [doi](#)

b: Distribution of *Trioza neglecta* in Bulgaria. [doi](#)

Feeds on: We collected adults and immatures on *Elaeagnus angustifolia* L., which is a confirmed host plant of *T. neglecta* (Loginova 1978, Lauterer and Janíček 1990). *Elaeagnus angustifolia* is not native to the Bulgarian flora. It is planted intentionally as an ornamental plant, to stabilise dry and eroded areas and in shelter belts. It has naturalised and become invasive in many regions of Bulgaria (Petrova et al. 2013).

Distribution: General distribution. Native to eastern parts of south-eastern Europe, Middle East and Caucasus, alien in Central Europe and the Balkans. **Distribution in Bulgaria** (Fig. 126b). Published records: SPE (Lauterer and Janíček 1990). Material examined: PVS, SPE.

Notes: *Trioza neglecta* is an alien species in the Bulgarian fauna. The first record from Bulgaria dates back to 1987 from the vicinity of a road between Antonovo and Kesarevo in the north-central part of the country (Lauterer and Janíček 1990).

Trioza proxima Flor, 1861

Diagnosis: Adult (Fig. 127a). Burckhardt (1983).

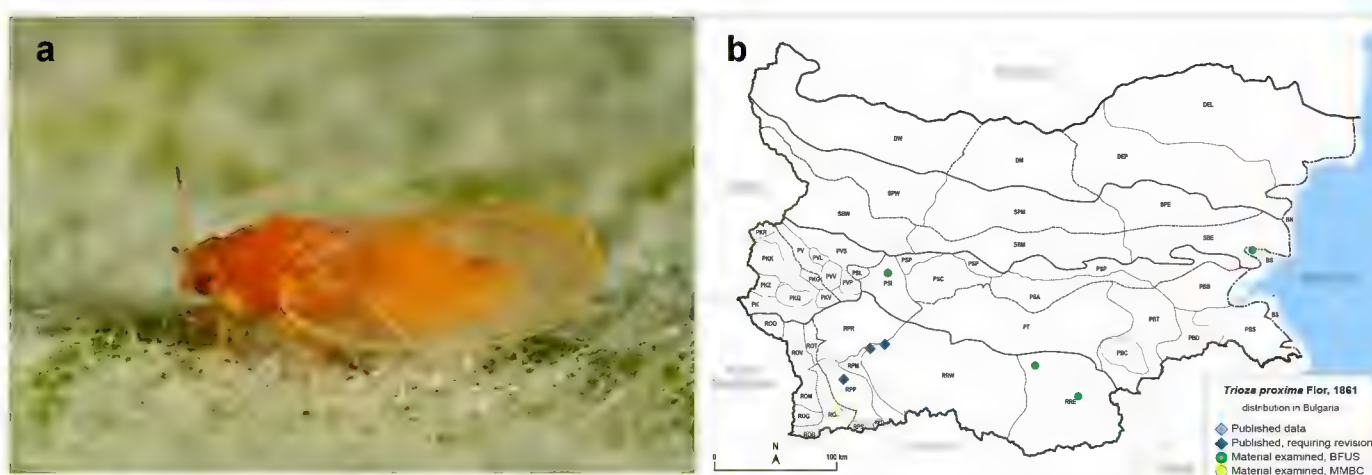


Figure 127.

Trioza proxima Flor, 1861.

a: *Trioza proxima*. adult female; [doi](#)

b: Distribution of *Trioza proxima* Flor, 1861 in Bulgaria. [doi](#)

Distribution: General distribution. Europe, Caucasus (Gegechkori and Loginova 1990). **Distribution in Bulgaria** (Fig. 127b). Published records: RPM, RPP, RRW (Klimaszewski 1970, Głowacka 1989). Material examined: BS, PSI, ROP, RRE.

Trioza remota Foerster, 1848

Diagnosis: Adult and fifth-instar immature. Ossiannilsson (1992).

Feeds on: We collected adults on *Quercus* sp. in Bulgaria. The confirmed host plants from other countries are *Qu. petraea* (Matt.) Liebl., *Qu. pubescens* Willd. and *Qu. robur* L. (Ossiannilsson 1992, Seljak 2020).

Feeds on: In Bulgaria, collected on *Urtica dioica* L. (Głowacka and Harizanov 1983, Wonglersak et al. 2017), which is well known as a host plant (Ossiannilsson 1992).

Distribution: General distribution. Palaearctic. **Distribution in Bulgaria** (Fig. 131b). Published records: BS, PVV, ROP, RPP, RRW, SBW (Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989, Wonglersak et al. 2017, Pramatarova et al. 2023). Material examined: BN, DEP, PBS, PKZ, PSI, PT, PVV, ROB, ROO, ROP, ROV, RPM, RPP, RPR, RPS, RRE, RRW, SBE, SBM, SBW, SPW.

Doubtful records

Aphalara sauteri Burckhardt, 1983

Notes: The records of *A. sauteri* Burckhardt, 1983 published from the Pirin Mountains by Głowacka (1989) are attributed here to *A. nigrimaculosa*, based on the material collected in the same area and examined by the authors. Both *A. nigrimaculosa* and *A. sauteri* are similar in morphology and it is likely that Głowacka's material was misidentified. *Aphalara sauteri* is distributed in the Alps, Slovakia and Spain and its presence in Bulgaria is doubtful (Burckhardt and Lauterer 1997a).

Bactericera acutipennis (Zetterstedt, 1828)

Notes: *Bactericera acutipennis* was recorded from Bulgaria (Rila Mountains) by Joakimov (1909) (as *Trioza acutipennis*). According to Klimaszewski (1965), this record probably refers to *Bactericera femoralis*, for which the name *Trioza acutipennis* auct. nec Zetterstedt was erroneously and quite frequently used in literature (Ossiannilsson 1992, Burckhardt and Lauterer 1997b). We agree with Klimaszewski's opinion. The presence of *B. acutipennis* in Bulgaria cannot be excluded, as its host plant, *Comarum palustre* L., occurs in the country, but further confirmation of *B. acutipennis* in Bulgaria is needed.

Bactericera reuteri (Šulc, 1913)

Notes: Further confirmation is also needed for *B. reuteri*, which was recorded by Głowacka and Harizanov (1983) from conifers at high altitudes in the Rhodope Mountains. It is likely that this record concerns the closely-related, similar and recently-described *B. lyrata* (Seljak et al. 2008, Seljak and Malenovský 2014) or *B. harrisoni*, which was erroneously described and illustrated as '*Trioza reuteri*' by Dobreanu and Manolache (1962) (see Conci and Tamanini (1985c)). The latter two species are confirmed in this paper on the basis of recently-collected material from Bulgaria. *Bactericera reuteri* is distributed in central and northern Europe, Russia and Mongolia and is monophagous on *Potentilla anserina* L. (Seljak et al. 2008). *Potentilla anserina* occurs in Bulgaria, but is restricted to the Danube Plain, with a

maximum altitude of 300 m a.s.l. (Assyov et al. 2012), which makes the occurrence of *B. reuteri* at high altitude of the Rhodope Mountains unlikely.

***Dyspersa apicalis* (Foerster, 1848)**

Notes: The record of '*Trioza apicalis*' by Klimaszewski (1965) from Bulgaria (RRW) is doubtful according to Burckhardt (1986) as it could concern any species of the *Dyspersa apicalis* complex.

***Dyspersa viridula* (Zetterstedt, 1828)**

Notes: The name '*Trioza viridula*' was often misinterpreted in the past (Ossiannilsson 1972, Burckhardt 1986). The record of '*Trioza viridula*' by Joakimov (1909) from Bulgaria (PVV) could, according to Burckhardt (1986), concern any species of the *Dyspersa apicalis* complex. The records of '*Trioza viridula*' by Harizanov and Lauterer (1968), Klimaszewski (1970) and Głowacka and Harizanov (1983) are attributed here to *Dyspersa cirsii*.

***Eryngiofaga mesomela* (Flor, 1861)**

Notes: *Eryngiofaga mesomela* was reported from Bulgaria by Joakimov (1909). However, this report probably refers to *E. dlabolai* (Vondráček, 1957), which was only later distinguished from *E. mesomela* (Pramatarova et al. 2021, Pramatarova et al. 2023). This is also supported by the lack of additional material of *E. mesomela* from Bulgaria, in contrast to numerous material of *E. dlabolai* (see above).

***Trioza dispar* Löw, 1878**

Notes: Together with *T. foersteri* Meyer-Dür, 1871, *T. megacerca*, *T. proxima* and *T. tatrensis* Klimaszewski, 1965, *T. dispar* forms a group of morphologically and biologically similar species and the records of *T. dispar* published before the revision of the group by Burckhardt (1983) should be re-examined (see also Lauterer and Malenovský (2002)). This also applies to the only record of *T. dispar* from Bulgaria (Rila Mts.) by Joakimov (1909), as it could be, for example, *T. megacerca* or *T. proxima*, which have been confirmed more recently from this country. As the specimens were not available for revision (Pramatarova et al. 2023), we consider the occurrence of *T. dispar* in Bulgaria to be doubtful.

Discussion

Nomenclatural acts

The following new synonymy is proposed here:

Colposcencia osmanica Vondráček, 1953: 440 = *Colposcencia kiritshenkoi* Loginova, 1960: 67, syn. nov.

Colposcencia osmanica was described by Vondráček (1953) on the basis of a large series of specimens collected in Turkey ('Ankara-Baraj, Anatolie, 3-4 July 1947, Feke, Toros, Anatolia, 12 August 1947, for many specimens of both sexes. Holotype and paratypes in the collections of National museum in Praha and those of author'). In the National Museum of Czechia in Prague (NMPC), we found 111 male and 85 female specimens, the labelling of which exactly corresponds with the published data on place and date of collection. All these specimens are dry-mounted (glued on pointed cardboard labels), but none of them was originally associated with an identification or type label, i.e. no holotype was actually fixed from the type series and labelled as such. There was only a label "*Colposcencia osmanica* Vond." pinned to the top of the box in which these specimens were kept. Due to the lack of labelling, the specimens were previously overlooked and omitted from the catalogue of the type specimens of Sternorrhyncha in the NMPC (Malenovský et al. 2016), but we have no doubt that they are part of the original type series of *C. osmanica*. The personal collection of Karel Vondráček in the Psylloidea collection in the Moravian Museum in Brno includes 10 microscopic slides with seven males, eight females and parts of other specimens of *C. osmanica* from 'Ankara - Baraj, 3-4.7.1947, Hoberlandt'; all slides were labelled as syntypes. In accordance with Article 74 of the ICZN (1999), we designate here a lectotype for *C. osmanica* in order to stabilise the nomenclature. The lectotype is a dry-mounted male deposited in the NMPC and labelled as follows: 'Ankara - Baraj, Anat. 3-4. VII 47, Exp. N Mus ČSR' and 'LECTOTYPUS, *Colposcencia osmanica* Vondráček, 1953, design. by I. Malenovský in Pramatarova et al. (2025)'. Six dry-mounted paralectotypes (3 males, 3 females) with the same locality data are newly deposited in MMBC, the rest of the dry-mounted paralectotypes are kept in NMPC.

Colposcencia kiritshenkoi was described by Loginova (1960), based on specimens from Nakchivan in Azerbaijan. Although Loginova (1960) cited the work of Vondráček (1953), in the original description, she did not give any characters that distinguish *C. kiritshenkoi* from *C. osmanica*. In our opinion, the illustrations of the head, forewing and especially the male and female terminalia of *C. osmanica* by Vondráček (1953) and of *C. kiritshenkoi* by Loginova (1960) do not differ in any important details and show the same species. Loginova (1974b) later considered *C. osmanica* and *C. kiritshenkoi* as two valid species which she distinguished in her identification key of Palaearctic *Colposcencia* spp. mainly by the colouration of the body (green-yellow to yellow in *C. osmanica* vs. variegated, yellow-orange-crimson, with white spots on head and thorax in *C. kiritshenkoi*) and less clearly also by the forewing pattern (consisting of more or less well defined brownish spots on a yellowish background in *C. osmanica* vs. consisting of three brown stripes and spots in *C. kiritshenkoi*). Although Loginova (1974b) correctly stated that all *Colposcencia* species show a seasonal variation in colouration and indicated in the key that the above-mentioned differences in colouration between *C. osmanica* and *C. kiritshenkoi* should be compared in 'summer' specimens, she probably did not take into account that the type series of *C. osmanica* was collected in July and August, while the type specimens of *C.*

kiritshenkoi were collected in April and, thus, could be different seasonal forms of the same species.

Both *C. osmanica* and *C. kiritschenkoi* have been reported from Bulgaria (Klimaszewski 1963, Klimaszewski 1965, Gegechkori and Loginova 1990). Many specimens of the two colour forms corresponding to *C. osmanica* (collected from late June to October) and *C. kiritshenkoi* (collected in April and May) were also examined by us from the collections of BFUS and MMBC. The two forms are sympatric in Bulgaria and we could not detect any differences in the morphology of the male and female terminalia (Fig. 12c). We also compared these specimens from Bulgaria with the type series of *C. osmanica* from Turkey (see above) and a specimen originally identified as *C. kiritshenkoi* by M. M. Loginova (deposited in the MMBC). We conclude that all these specimens are conspecific and propose to formally synonymise *C. kiritshenkoi* under *C. osmanica*. The synonymy of the two forms should be further supported by molecular data in the future. Pramatarova et al. (2024) published the partial sequences of *COI* and *cytb* gene fragments from specimens of both forms of *C. osmanica* collected in Bulgaria, but each of their sequences was unfortunately extracted from different specimens (*COI* - *C. kiritshenkoi*, *cytb* - *C. osmanica* s.str.) and the data cannot be directly compared between the two seasonal forms at the moment.

According to Spodek et al. (2017), further studies are needed to determine whether *C. kiritshenkoi* (and thus *C. osmanica*) is conspecific with *Colposcencia lurida* (Scott, 1880). The identity of *C. lurida* is poorly known - it was described on the basis of a single male from the Caucasus (Scott 1880) and has never been re-described or illustrated. Recently, *C. lurida* was reported from Israel (Spodek et al. 2017).

Diversity, distribution and host associations of Psylloidea in Bulgaria

Prior to this work, 113 species of psyllids have been recorded from Bulgaria in 51 publications. We consider the records of seven species (*Aphalara sauteri*, *Bactericera acutipennis*, *B. reuteri*, *Dyspersa apicalis*, *D. viridula*, *Eryngiofaga mesomela* and *Trioza dispar*) as doubtful because they may have been misidentified. The published records from Bulgaria (Joakimov 1909, Klimaszewski 1965, Głowacka and Harizanov 1983, Głowacka 1989) precede taxonomic revisions in which relevant diagnostic characters for distinguishing closely-related and similar species were presented and we could not confirm the occurrence of these particular species in Bulgaria from the material we collected or examined. It is likely that some of these records were misidentified because similar, allopatric species are confirmed here from Bulgaria (*Aphalara nigrimaculosa*, *Eryngiofaga dlabolai*) or the species names are known to have been frequently misinterpreted in the past (*B. acutipennis*, *D. viridula*). On the other hand, *B. acutipennis*, *B. reuteri*, *D. apicalis* and *T. dispar* (in their current taxonomic interpretations) are widely distributed in Europe (Burckhardt 1983, Burckhardt 1986, Ossiannilsson 1992, Seljak et al. 2008) and their host plants occur in Bulgaria (POWO 2024), so the occurrence of these psyllid species in the country is possible, but awaits proper documentation. *Arytaina genistae*, *Craspedolepta latior*, *Cacopsylla nigrita*, *Dyspersa mesembrina* and

Trichoermes walkeri are also known from Bulgaria only from previous publications (Klimaszewski 1965, Głowacka and Harizanov 1983, Burckhardt 1986, Labina et al. 2014) and are missing in the collections that were accessible to us. Although a revision of the relevant material and confirmation of these species by newly-collected material in the field would be desirable, we consider these data to be trustworthy. For 105 species previously published from Bulgaria, we were able to confirm their occurrence in the country on the basis of material that we personally examined. One species name, *Colposcena kiritshenkoi*, is newly synonymised and 25 species are recorded here for the first time from Bulgaria.

To summarise, a total of 130 species of jumping plant lice have been identified in Bulgaria to date. They belong to six families and 33 genera: Aphalaridae (8 genera, 31 species), Calophyidae (1 genus, 1 species), Carsidaridae (1 genus, 1 species), Liviidae (6 genera, 15 species), Psyllidae (8 genera, 45 species) and Triozidae (9 genera, 37 species). Compared to the numbers of psyllid species known from neighbouring countries and other countries of the Balkan Peninsula from where comprehensive faunistic data are available (Greece: 89 spp., Burckhardt (1987); Romania: 86 spp., Doboreanu and Manolache (1962); Serbia: 63 spp., Jerinić-Prodanović (2010); Turkey: 101 spp., Drohojowska and Burckhardt (2014); Croatia: 86 spp., Pintar (2023); Slovenia: 126 spp., Seljak (2020); see also Ouvrard (2020) and Suppl. material 1), the diversity of jumping plant lice in Bulgaria seems to be relatively high, although most of these countries have not been studied with the same intensity and, with the exception of Slovenia, a significantly higher number of species can be expected in them given their size and the diversity of natural conditions. To a certain extent, this also applies to Bulgaria, as 72 other species are known from at least one of the neighbouring countries (Greece, North Macedonia, Romania, Serbia or Turkey), but have not yet been found in Bulgaria (Suppl. material 1). Although our list is quite comprehensive, we expect that new taxa will be identified in the Bulgarian psyllid fauna in the future.

From a biogeographical point of view, the currently known psyllid fauna of Bulgaria is mainly composed of species that are widely distributed in the Palaearctic (36 spp.), the Western Palaearctic (22 spp.) or in Europe (10 spp.), some even having a Holarctic distribution (5 spp.).

On the other hand, many species have a more restricted distributional pattern. Some of them represent Mediterranean, sub-Mediterranean or Ponto-Mediterranean elements and they reach the northern limits of their general distribution (or at least their distribution in eastern Europe) in southern or central Bulgaria or on the Bulgarian Black Sea coast, often together with their host plants, such as *Agonoscena pistaciae*, *A. targionii*, *Megagonoscena gallicola* and *M. viridis* on *Pistacia terebinthus*, *Colposcena aliena* and *C. traciana* on *Tamarix* spp., *Euphyllura phillyreae* on *Phillyrea latifolia*, *Strophingia cinerea* on *Erica arborea*, *Cacopsylla notata* on *Pyrus spinosa* and *Psylla colorata* on *Ostrya carpinifolia* or they seem to be limited by the climate, as their host plants are more widespread, such as *Aphorma lichenoides* on *Ranunculus bulbosus*, *Camarotoscena subrubescens* on *Populus* spp., *Livia mediterranea* on *Carex humilis* and *C. pontica*,

Bactericera trigonica on Apiaceae and *Phylloplecta trisignata* on *Rubus* spp. (Spodek et al. 2017, Burckhardt et al. 2023).

Homotoma ficus, *Diaphorina lycii*, *Spanioneura buxi*, *S. fonscolombii* and *Lauritrioza alacris* are also widespread in the Mediterranean Region (and in the Caucasus and/or the Middle East, *D. lycii* also in Central Asia), but their host plants are not indigenous, i.e. they were introduced to Bulgaria and none of these psyllid species can be considered autochthonous in the Bulgarian fauna, although they reproduce outdoors in Bulgaria and some have even been found in natural habitats (*H. ficus*, *D. lycii*). The status of *Cacopsylla pulchella* is unclear, as its host plant, *Cercis siliquastrum*, is native to eastern Bulgaria (Assyov et al. 2012), but we only detected the psyllids on cultivated ornamental trees in an urban environment. *Calophya rhois*, associated with *Cotinus coggygria*, is another psyllid species widely distributed in the Mediterranean, Middle East and Asia, relatively common in parks and gardens or along roads. While *C. rhois* is alien in several European countries (Burckhardt and Mühlethaler 2003, Mifsud et al. 2010), its host plant is hypothesised to be native to Bulgaria (Assyov et al. 2012, POWO 2024). In this case too, its status in Bulgaria should be confirmed by fieldwork in natural habitats. In addition to these species, *Livilla variegata* (native to southern Europe and the Alps), *Trioza neglecta* (native to eastern parts of south-eastern Europe, the Middle East and the Caucasus) and *Acizzia jamatonica* (native to eastern Asia) have clearly been unintentionally introduced to Bulgaria with their host plants, which are used as ornamentals or for erosion control, but in the first two cases, naturalised and are invasive (Petrova et al. 2013). In total, therefore, at least eight species (6% of the Bulgarian psyllid fauna) can be regarded as alien (non-native, adventive) and naturalised in Bulgaria to date.

Several species reach the westernmost limits of their known natural distribution in Bulgaria. These species are either mainly distributed in the steppe vegetation of southern Ukraine, Russia and Central Asia and/or semi-arid regions of the Middle East and the northern Caucasus, such as *Colposcения osmanica*, *Craspedolepta araneosa*, *Psyllopsis machinosa*, *Eryngiofaga babugani* and *Heterotrioza kochiae* (Gegechkori 1984, Gegechkori and Loginova 1990) or in the mountains of north-eastern Turkey and/or the Caucasus, such as *Aphalara nigrimaculosa*, *Colposcения bidentata* and *Dyspersa kantshavelii* (Gegechkori 1984, Burckhardt 1988, Burckhardt and Lauterer 1997a).

Other "steppic" elements, mainly associated with open dry grasslands or saline habitats, extend from Central Asia, the Middle East or the Caucasus across the Balkans and reach their western distribution limit in central or south-western Europe: *Craspedolepta artemisiae*, *C. bulgarica*, *C. innoxia*, *C. pontica*, *Eumetoecus kochiae*, *Rhodochlanis bicolor*, *Bactericera perrisii*, *Heterotrioza dichroa* and *Eryngiofaga dlabolai* (Lauterer 1965, Loginova 1977, Conci et al. 1993, Lauterer and Malenovský 2002, Seljak 2020).

Another group of species is known to be restricted to south-eastern and central Europe - it includes species associated with open thermophilous woodlands and dry grasslands (*Psyllopsis meliphila*, *Arytaina maculata*, *Arytainilla spartiicola*, *Livilla cognata*, *L. horvathi*, *L. radiata* and *Trioza megacerca*) and ruderal habitats (*Craspedolepta conspersa*,

Bactericera lyrata) (Conci and Tamanini 1983, Conci and Tamanini 1985a, Hodkinson and Hollis 1987, Conci and Tamanini 1990, Lauterer and Malenovský 2002, Malenovský et al. 2011, Seljak and Malenovský 2014). *Psyllopsis dobreanuae*, which was newly reported here for Bulgaria, was previously only known from eastern Romania, North Macedonia and Moldova (Loginova 1971, Malenovský and Jerinić-Prodanović 2011).

A large part of Bulgaria is covered by mountains and a significant part of the country's biodiversity is associated with montane and alpine habitats. A relatively large number of psyllid species in Bulgaria are also restricted to the mountains. These include: i) species with predominantly boreal distribution in the northern parts of Eurasia and rather isolated occurrences in the mountains or highlands of central and south-eastern Europe, such as *Aphalara affinis*, *Craspedolepta nebulosa*, *C. subpunctata*, *Cacopsylla corcontum*, *C. myrtilli*, *C. sorbi*, *Bactericera bohémica*, *B. femoralis*, *Dyspersa abdominalis*, *D. cirsii*, *D. munda*, *D. pallida*, *Trioza cerastii* and *T. rotundata* (Lauterer 1976, Ossiannilsson 1992, Conci et al. 1993, Conci et al. 1996, Labina et al. 2009, Malenovský et al. 2014); ii) species apparently endemic to the mountains of central and south-eastern Europe (Alps, Carpathians and Balkans), such as *Psylla alpina*, *Bactericera harrisoni* and *Dyspersa mesembrina* (Conci and Tamanini 1985c, Burckhardt 1986, Conci et al. 1993, Conci et al. 1996); iii) species more widely distributed in the Alps, the Carpathians, the Balkans, the Caucasus and the Alborz in northern Iran, such as *Trioza rumicis* (Conci et al. 1996, Burckhardt and Lauterer 1993) and iv) species restricted to the Balkans, the Pontic Mountains and the Caucasus, such as *Aphalara nigrimaculosa* and *Dyspersa kantshavelii* mentioned above. A special area of nature conservation importance in Bulgaria is the Strandzha Mountains in the south-east of the country with its mixed stands of *Calluna vulgaris* and *Erica arborea* heaths (Gusseff 2015), where only *Strophingia ericae* and *S. cinereae* have been recorded.

However, these conclusions should be regarded as provisional as the knowledge of the distribution of many psyllid species is incomplete and the knowledge of the Bulgarian psyllid fauna is also uneven at the regional level. Most of the data come from the south-western part of the country (Fig. 132). This explains why the Krupnik-Sandanski-Petrich Valley has the highest number of 58 recorded species, followed by the Pirin and Rila mountains, with 50 psyllid species each. In contrast, the regions of the Ruy, Verila, Plana, Ograzhden and Sturgach Mountains, Kraishte and Strandzha-Dervent Districts have been neglected and lack data, while the Danubian Plain and south-eastern Bulgaria remain poorly studied.

The knowledge of the host plants of the Bulgarian psyllids is also quite limited, as most records lack precise information on the host plants and, when this is present in the collections, it is rarely associated with material of psyllid immatures, so that these plant taxa can be considered as 'confirmed hosts' (Burckhardt et al. 2014). Nevertheless, we provide here new host plant information for ten psyllid species, some of which are also confirmed by the presence of immatures. These records indicate a regional specificity of the psyllid species in Bulgaria, as these species were previously known to be associated with other, albeit closely related, plant taxa in western, central and southern Europe (*Colposcenia traciana*, *Craspedolepta pontica*, *Arytaina maculata*, *Arytainilla spartiicola*,

This study was financially supported by the Scientific Research Fund of Sofia University “St. Kliment Ohridski”, grant number 80-10-5/2024. Monika Pramatarova was supported by the Bulgarian Ministry of Education and Science under the National Research Programme “Young scientists and postdoctoral fellows – 2” approved by DCM 206/07.04.2022. Part of the work was carried out during her stay at the Faculty of Science at Masaryk University in Brno, supported by the Erasmus+ programme of the European Union. Igor Malenovský was partially supported by the grant of the Moravian Museum in Brno from the Ministry of Culture of Czechia under its long-term conceptual development programme for research institutions (ref. MK000094862).

Author contributions

Monika Pramatarova: Investigation, Resources, Data Curation, Visualisation, Writing – Original Draft, Funding Acquisition

Igor Malenovský: Conceptualisation, Investigation, Resources, Visualisation, Writing – Original Draft, Writing – Review and Editing, Supervision

Ilia Gjonov: Conceptualisation, Investigation, Resources, Data Curation, Validation, Writing – Review and Editing, Supervision, Funding Acquisition

References

- Al-Khawaldeh M, Katbeh-Bader A, Burckhardt D (1997) Psylloidea (Hemiptera) of Jordan. *Zoology in the Middle East* 15: 71-82. <https://doi.org/10.1080/09397140.1997.10637741>
- Andrianova NS, Klimaszewski SM (1983) A contribution to the knowledge of psyllids (Psylloidea) in southern and south-eastern European USSR. *Acta Biologica Silesiana* 13: 30-45.
- Assyov B, Petrova A, Dimitrov D, Vassilev R (2012) *Conspectus of the Bulgarian vascular flora: Distribution maps and floristic elements. Fourth revised and enlarged edition.* BSBCP, Sofia.
- Baeva VG (1985) *Fauna Tadzhikskoy SSR. Tom VIII. Psillidy, ili listobloshky (Homoptera, Psylloidea).* [Fauna of the Tadjik Soviet Socialist Republic. Volume VIII. Jumping plant lice (Homoptera, Psylloidea)]. Donish, Dushanbe, 340 pp. [In Russian].
- Bastin S, Burckhardt D, Reyes-Betancort JA, Hernández-Suárez E, Ouvrard D (2023) A review of the jumping plant-lice (Hemiptera: Psylloidea) of the Canary Islands, with descriptions of two new genera and sixteen new species. *Zootaxa* 5313 (1): 1-98. <https://doi.org/10.11646/zootaxa.5313.1.1>
- Burckhardt D (1979) Phylogenetische Verhältnisse in der Gattung *Psylla* s. l. (Sternorrhyncha, Psyllodea) mit besonderer Berücksichtigung von *Psylla colorata* Löw. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 52: 109-115. [In German]. <https://doi.org/10.5169/seals-401913>
- Burckhardt D (1983) Beiträge zur Systematik und Faunistik der schweizerischen Psyllodea (Sternorrhyncha). *Entomologica Basiliensia* 8: 43-69. [In German].

- Burckhardt D (1984) The Mediterranean species of *Diaphorina* Loew (Homoptera, Psylloidea). *Phytophaga* 2: 1-30.
- Burckhardt D (1986) Taxonomy and host plant relationships of the *Trioza apicalis* Förster complex (Hemiptera, Homoptera: Triozidae). *Entomologica scandinavica* 16: 415-432. <https://doi.org/10.1163/187631285X00379>
- Burckhardt D, Hodkinson I (1986) A revision of the west Palaearctic pear psyllids (Hemiptera: Psyllidae). *Bulletin of Entomological Research* 76: 119-132. <https://doi.org/10.1017/S0007485300015340>
- Burckhardt D (1987) The jumping plant lice or psyllids (Homoptera: Psylloidea) from Greece. *Biologia Gallo-hellenica* 13: 107-110.
- Burckhardt D (1988) Angaben zur Psyllidenfauna der Nordosttürkei (Homoptera: Psylloidea). *Mitteilungen der Entomologischen Gesellschaft Basel* 38 (1): 31-44. [In German].
- Burckhardt D (1989) Les psylles (Insecta, Homoptera, Psylloidea) de l'Algérie. *Archives des Sciences (Geneva)* 42: 367-424. [In French].
- Burckhardt D, Lauterer P (1989) Systematics and biology of the Rhinocolinae (Homoptera: Psylloidea). *Journal of Natural History* 23 (3): 643-712. <https://doi.org/10.1080/00222938900770371>
- Burckhardt D, Lauterer P (1993) The jumping plant-lice of Iran (Homoptera, Psylloidea). *Revue Suisse de Zoologie* 100 (4): 829-898. <https://doi.org/10.5962/bhl.part.79887>
- Burckhardt D, Lauterer P (1997a) Systematics and biology of the *Aphalara exilis* (Weber & Mohr) species assemblage (Hemiptera: Psyllidae). *Entomologica Scandinavica* 28 (3): 271-305. <https://doi.org/10.1163/187631297X00088>
- Burckhardt D, Lauterer P (1997b) A taxonomic reassessment of the trioqid genus *Bactericera* (Hemiptera: Psylloidea). *Journal of Natural History* 31: 99-153. <https://doi.org/10.1080/00222939700770081>
- Burckhardt D (1999) *Cacopsylla pulchella* (Löw), eine Blattflohart des Judasbaums, auch in Basel (Hemiptera, Psylloidea). *Mitteilungen der Entomologischen Gesellschaft Basel* 49 (2): 71-76. [In German].
- Burckhardt D, Basset Y (2000) The jumping plant-lice (Hemiptera, Psylloidea) associated with *Schinus* (Anacardiaceae): systematics, biogeography and host plant relationships. *Journal of Natural History* 34 (1): 57-155. <https://doi.org/10.1080/002229300299688>
- Burckhardt D, Freuler J (2000) Jumping plant-lice (Hemiptera, Psylloidea) from sticky traps in carrot fields in Valais, Switzerland. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 73: 191-209. <https://doi.org/10.5169/seals-402777>
- Burckhardt D, Lauterer P (2002a) Revision of the Central European *Trioza rotundata* (Hemiptera, Psylloidea): taxonomy and bionomy. *Bulletin de la Société Entomologique Suisse* 75: 21-34. <https://doi.org/10.5169/seals-402813>
- Burckhardt D, Lauterer P (2002b) *Trioza flixiana* sp. n. (Hemiptera, Psylloidea), a new jumping plant-lice species from Central Europe. *Revue Suisse de Zoologie* 109 (4): 799-802. <https://doi.org/10.5962/bhl.part.79571>
- Burckhardt D, Mifsud D (2003) Jumping plant-lice of the Paurocephalinae systematics and phylogeny. *Contributions to Natural History* 2: 3-34.
- Burckhardt D, Mühlethaler R (2003) Exotische Elemente der schweizer Blattflohfauna (Hemiptera, Psylloidea) mit einer Liste weiterer potentieller Arten. *Mitteilungen der Entomologischen Gesellschaft Basel* 53: 98-110. [In German].

- Burckhardt D, Lauterer P (2006) The Palaearctic trioizids associated with Rubiaceae (Hemiptera, Psylloidea): a taxonomic re-evaluation of the *Trioza galii* Foerster complex. *Revue Suisse de Zoologie* 113: 269-286. <https://doi.org/10.5962/bhl.part.80350>
- Burckhardt D, Lauterer P (2009) Faunistic and taxonomic notes on jumping plant-lice from the Alps (Hemiptera: Psylloidea: Aphalarinae). *Contributions to Natural History* 12: 341-348.
- Burckhardt D (2010) Pictorial key of Central European *Cacopsylla* species associated with Rosaceae. *Naturhistorisches Museum Basel* URL: <https://www.dlr.rlp.de/Psylliden-english>
- Burckhardt D, Ouvrard D, Queiroz D, Percy D (2014) Psyllid host-plants (Hemiptera: Psylloidea): resolving a semantic problem. *Florida Entomologist* 97 (1): 242-246. <https://doi.org/10.1653/024.097.0132>
- Burckhardt D, Díaz F, Queiroz D (2017) Four new neotropical *Trioza* species associated with Loranthaceae (Santalales) and comments on mistletoe inhabiting psyllids (Hemiptera, Psylloidea). *Alpine Entomology* 1: 91-108. <https://doi.org/10.3897/alpento.1.20905>
- Burckhardt D, Ouvrard D, Percy D (2021) An updated classification of the jumping plant-lice (Hemiptera: Psylloidea) using molecular and morphological evidence. *European Journal of Taxonomy* 736: 137-182. <https://doi.org/10.5852/ejt.2021.736.1257>
- Burckhardt D, Šerbinová LŠ, Malenovský I, Queiroz DL, Aléné DC, Cho G, Percy DM (2023) Phylogeny and classification of jumping plant lice of the subfamily Liviinae (Hemiptera: Psylloidea: Liviidae) based on molecular and morphological data. *Zoological Journal of the Linnean Society* 201 (2): 387-421. <https://doi.org/10.1093/zoolinnean/zlad128>
- Cho G, Burckhardt D, Lee S (2017a) On the taxonomy of Korean jumping plant-lice (Hemiptera: Psylloidea). *Zootaxa* 4238 (4): 531-561. <https://doi.org/10.11646/zootaxa.4238.4.3>
- Cho G, Burckhardt D, Inoue H, Luo X, Lee S (2017b) Systematics of the east Palaearctic pear psyllids (Hemiptera: Psylloidea) with particular focus on the Japanese and Korean fauna. *Zootaxa* 4362 (1). <https://doi.org/10.11646/zootaxa.4362.1.4>
- Cho G, Labina ES, Lee S (2020) To the knowledge of jumping plant-lice (Hemiptera: Psylloidea) of the Russian Far East. *Far Eastern Entomologist* 412: 13-16. <https://doi.org/10.25221/fee.412.2>
- Cho G, Burckhardt D, Lee S (2022) Check list of jumping plant-lice (Hemiptera: Psylloidea) of the Korean Peninsula. *Zootaxa* 5177 (1): 1-91. <https://doi.org/10.11646/zootaxa.5177.1.1>
- Conci C, Tamanini L (1983) *Craspedolepta conspersa*, nuova per l'Italia, da *Artemisia vulgaris*. *Studi Trentini di Scienze Naturali* 60: 77-85. [In Italian].
- Conci C, Tamanini L, Burckhardt D (1983) *Aphorma lichenoides*, new for Italy, and revision of the genus (Homoptera Psylloidea). *Bolletino del Museo Civico di Storia Naturale di Verona* 10: 445-458.
- Conci C, Tamanini L (1984a) *Phylloplecta trisignata* (Löw, 1886), host plant *Rubus* sp., of the complex *Rubi Corylifolii* (Homoptera: Psylloidea). *Studi Trentini di Scienze Naturali, Acta Biologica* 61: 249-261.
- Conci C, Tamanini L (1984b) *Rhodochlanis salicorniae* Klim., new for Italy, *R. hodkinsoni* n. sp., from Apulia, host plant *Suaeda vera*, and consideration on the genus (Homoptera

- Psylloidea Aphalaridae). Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano 125 (1-2): 61-80.
- Conci C, Tamanini L (1985a) *Arytainilla spartiicola* from Puglia, new for Italy. Atti della Accademia Roveretana degli Agiati VI (25): 123-136.
 - Conci C, Tamanini L (1985b) *Lauritrioza* n. gen., for *Trioza alacris*. Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano 126: 237-256.
 - Conci C, Tamanini L (1985c) *Bactericera harrisoni* in Italy, and comparison with *B. bohémica* (Homoptera Psylloidea). Annali del Museo Civico di Rovereto 1: 99-110.
 - Conci C, Tamanini L (1986) The nymph of *Phylloplecta trisignata* (Löw) and new data on the morphology and the life history of the species (Homoptera Psylloidea Triozidae). Bollettino dell'Istituto di Entomologia Guido Grandi della Università degli Studi di Bologna 41: 93-100.
 - Conci C, Tamanini L (1990) Notes on the genus *Psyllopsis* (Homoptera Psylloidea). Atti dell'Accademia Roveretana degli Agiati 29: 57-85. <https://doi.org/10.5962/bhl.part.28289>
 - Conci C, Rapisarda C, Tamanini L (1993) Annotated catalogue of the Italian Psylloidea. First part (Insecta Homoptera). Atti dell'Accademia Roveretana degli Agiati, Contributi della classe di Scienze Matematiche, Fisiche e Naturali, ser. VII 242 (2): 33-136.
 - Conci C, Rapisarda C, Tamanini L (1996) Annotated catalogue of the Italian Psylloidea, Second part (Insecta Homoptera). Atti dell'Accademia Roveretana degli Agiati, Contributi della classe di Scienze Matematiche, Fisiche e Naturali, ser. VII 245 (5): 5-207.
 - Doboreanu E, Manolache C (1962) Homoptera Psylloidea. Fauna Republicii Populare Romine. VIII (3). Academia Republicii Populare Romine, Bucuresti, 376 pp. [In Romanian].
 - Drohojowska J, Burckhardt D (2014) The jumping plant-lice (Hemiptera: Psylloidea) of Turkey: A checklist and new records. Turkish Journal of Zoology 38: 559-568. <https://doi.org/10.3906/zoo-1307-15>
 - Etropolska A, Jarausch B, Trenchev G, Jarausch W (2011) Survey of psyllid vectors of fruit tree phytoplasmas in Bulgaria: a preliminary report. Bulletin of Insectology 64: 261-262.
 - Etropolska A, Jarausch W, Jarausch B, Trenchev G (2015) Detection of European fruit tree phytoplasmas and their insect vectors in important fruit-growing regions in Bulgaria. Bulgarian Journal of Agricultural Science 21 (6): 1248-1253.
 - Fidan H, Stefanova G, Kostova I, Stankov S, Damyanova S, Stoyanova A, Zheljazkov V (2019) Chemical composition and antimicrobial activity of *Laurus nobilis* L. essential oils from Bulgaria. Molecules 24 (4). <https://doi.org/10.3390/molecules24040804>
 - Gegechkori AM (1975) New jumping plant-lice (Homoptera, Psylloidea) from Transcaucasia. Bulletin of the Academy of Sciences of the Georgian SSR 78 (2): 477-480. [In Russian].
 - Gegechkori AM (1977) New species of jumping plant-lice (Homoptera, Psylloidea) from the Transcaucasia. Entomologicheskoe Obozrenie 56: 93-97. [In Russian].
 - Gegechkori AM (1981) New genus and species of the Psylloidea (Homoptera) from Transcaucasia and Jugoslavia. Zoologicheskii Zhurnal 60 (5): 695-702. [In Russian].
 - Gegechkori AM (1984) Psyllidy (Homoptera, Psylloidea) Kavkaza. Mecniereba, Tbilisi, 296 pp. [In Russian].
 - Gegechkori AM, Loginova MM (1990) Psyllids (Homoptera, Psylloidea) of the USSR (an annotated check list). Mecniereba, Tbilisi. [In Russian].

- Głowacka E, Harizanov A (1983) The jumping plant lice (Homoptera, Psylloidea) from Western Rodope Mountains (Bulgaria). *Acta Biologica Katowice* 12: 62-69.
- Głowacka E (1989) Jumping plant-lice (Homoptera: Psylloidea) of the Pirin Mountains (Bulgaria). *Acta Biologica Silesiana* 13: 14-19.
- Gussev C (2015) 22F4 Strandzha heaths of tree heath (*Erica arborea*) and common heather (*Calluna vulgaris*). In: Biserkov V, Gussev C, Popov V, Hibaum G, Roussakova V, Pandurski I, Uzunov Y, Dimitrov M, Tzonev R, Tsoneva S, et al. (Eds) Red Data Book of the Republic of Bulgaria. Vol. 3 Natural habitats. IBEI-BAS & MoEW, Sofia, 252 - 253 p. pp. URL: https://www.researchgate.net/profile/Valko-Biserkov/publication/310503064_Red_Data_Book_of_the_Republic_of_Bulgaria_Volume_3_Natural_habitats/links/58306a9408aef19cb817f442/Red-Data-Book-of-the-Republic-of-Bulgaria-Volume-3-Natural-habitats.pdf [ISBN 978-954-9746-23-5].
- Harizanov A (1963) Listni balhi po ovoshtnite kulturi v Balgaria. *Priroda* 12 (6): 91-97. [In Bulgarian].
- Harizanov A (1964) Listni balhi po ovoshtnite darveta. *Ovoshtarstvo* 2: 30-33. [In Bulgarian].
- Harizanov A (1966a) Biologo-ekologichni prouchvaniya varhu obiknovenata krushova listna balha *Psylla pyri* L. *Wissenschaftliche Arbeiten, Landwirtschaftlichen Hochschule „Wassil Kolarow“ Plowdiw, Bulgarien* 3 (3): 325-339. [In Bulgarian].
- Harizanov A (1966b) Biological and ecological studies on plum jumping plant-lice — *Psylla pruni* Scopoli. *Wissenschaftliche Arbeiten, Landwirtschaftlichen Hochschule „Wassil Kolarow“ Plowdiw, Bulgarien* 15 (2): 249-259. [In Bulgarian].
- Harizanov A (1966c) Biologische Untersuchungen über den südlichen Apfelblattfloh — *Psylla costalis* Flor. *Wissenschaftliche Arbeiten, Landwirtschaftlichen Hochschule „Wassil Kolarow“ Plowdiw, Bulgarien* 15 (2): 261-270. [In Bulgarian].
- Harizanov A (1966d) Fiziologichni promeni v krushevi lista, povredeni ot larvite na *Psylla pyri* L. *Priroda* 4: 52-54. [In Bulgarian].
- Harizanov A (1966e) Untersuchungen über den grossen Birnenblattfloh - *Psylla pyrisuga* Förster. *Wissenschaftliche Arbeiten, Landwirtschaftliche Hochschule "Wassil Kolarow", Plovidv* 15 (2): 271-282. [In Bulgarian].
- Harizanov A, Lauterer P (1968) Beitrag zur fauna der Blattflöhe (Homoptera-Psylloidea) in Bulgarien. *Wissenschaftliche Arbeiten, Landwirtschaftlichen Hochschule „Wassil Kolarow“ Plowdiw, Bulgarien* 17 (2): 139-145. [In Bulgarian].
- Harizanov A (1970) Morfologo-biologicheskoye izucheniya ogorodnoy listovoy blokhi (*Trioza nigricornis* F.). *Wissenschaftliche Arbeiten Landwirtschaftliche Hochschule "Wassil Kolarow", Plovdiv* 19 (2): 147-155.
- Harizanova V, Storeva A, Mohamedova M (2012) Preliminary study on the invasive *Acizzia jamatonica* (Hemiptera: Psyllidae) and its predators in Bulgaria. *Agricultural Science and Technology* 4: 56-61.
- Hodkinson I, White I (1979) Homoptera Psylloidea. *Handbooks for the Identification of British Insects. Royal Entomological Society of London, London* 2 (5a): 98 pp.
- Hodkinson ID (1981) Heather-feeding psyllids of the genus *Strophingia* (Homoptera). *Systematic Entomology* 6: 77-90. <https://doi.org/10.1111/j.1365-3113.1981.tb00017.x>
- Hodkinson ID, Hollis D (1987) The legume-feeding psyllids (Homoptera) of the west Palaearctic Region. *Bulletin of the British Museum (Natural History)* 56: 1-86. URL: <http://biostor.org/reference/127633>

- Hodkinson ID, Bird J (2000) Sedge and rush-feeding psyllids of the subfamily Liviinae (Insecta: Hemiptera: Psylloidea): a review. *Zoological Journal of the Linnean Society* 128: 1-19. <https://doi.org/10.1111/j.1096-3642.2000.tb00648.x>
- Horváth G (1897) Homoptera nova ex Hungaria. *Természetrájsi füzetek* 20: 620-648. [In Latin].
- Hubenov Z (1997) Possibilities for using of a system from the really defined natural territories for the faunistic researches in Bulgaria. *Acta Zoologica Bulgarica* 49: 5-9.
- ICZN (1999) International Code of Zoological Nomenclature. 4th edition. The International Trust for Zoological Nomenclature c/o the Natural History Museum, London, 271 pp. <https://doi.org/10.5962/bhl.title.50608>
- Jerinić-Prodanović D (2010) Checklist of jumping plant-lice (Hemiptera: Psylloidea) in Serbia. *Acta entomologica serbica* 15: 29-59.
- Jerinić-Prodanović D (2011) The first finding of the fig psylla *Homotoma ficus* L. (Hemiptera, Psylloidea, Homotomidae) in Serbia. *Pesticides and Phytomedicine* 26 (3): 205-212. <https://doi.org/10.2298/PIF1103205J>
- Joakimov D (1909) Po faunata na Hemiptera va Balgaria. *Narodni umotvoreniya, nauka i knizhnina* 25 (7): 1-34. [In Bulgarian].
- Klimaszewski SM (1961a) Psyllidologische Notizen. III—V (Homoptera). *Polskie Pismo Entomologiczne* 31 (6): 77-84. [In German].
- Klimaszewski SM (1961b) Psyllidologische Notizen I-II (Homoptera). *Annales Zoologici* 19: 113-123. [In German].
- Klimaszewski SM (1963) - Bemerkungen zur Systematik der Aphalarini Löw (Homoptera, Psyllidae). *Bulletin de l'Académie Polonaise des Sciences. Classe II* 11 (4): 187-189. [In German].
- Klimaszewski SM (1964) Psyllidologische Notizen VIII—XI (Homoptera). *Annales Zoologici* 22 (3): 1-67. [In German].
- Klimaszewski SM (1965) Psyllidologische Notizen XII—XIV (Homoptera). *Annales Zoologici* 23: 195-206. [In German].
- Klimaszewski SM (1970) Psyllidologische Notizen XVIII—XX (Homoptera). *Annales Zoologici* 27 (18): 417-428. [In German].
- Klimaszewski SM (1973) The jumping plant lice or psyllids (Homoptera, Psyllodea) of the Palaearctic. An annotated Check-List. *Annales Zoologici* 30 (7): 155-286.
- Klimaszewski SM (1975) Psyllodea Koliszki (Insecta: Homoptera). *Fauna Polski (Fauna Poloniae)*, vol. 3. Państwowe wydawnictwo naukowe, Warszawa. [In Polish].
- Konov Y (1961) Edin nov neproyatel na luka v Balgaria. *Rastitelna Zashtita* 6: 41-44. [In Bulgarian].
- Koprarev I, Yordanova M, Mladenov C (Eds) (2002) Geography of Bulgaria. Physical geography socio-economic geography. ForCom, Sofia, 760 pp. [In Bulgarian].
- Kuznetsova V, Maryńska-Nadachowska A, Głowacka E, Silva Pd (1995) Karyotypes of ten species of Psylloidea (Homoptera) and some karyotaxonomical remarks. *Beiträge zur Entomofaunistik* 45 (2): 383-391.
- Labina E (2007) A chromosomal study of 11 species of Psyllinea (Insecta: Homoptera). *Comparative Cytogenetics* 1 (2): 149-154.
- Labina E, Nokkala S, Maryńska-Nadachowska A, Kuznetsova V (2009) The distribution and population sex ratio of *Cacopsylla myrtilli* (W. Wagner, 1947) (Hemiptera: Psylloidea). *Folia biologica (Kraków)* 57 (3-4): 157-163. <https://doi.org/10.3409/fb57>

- Labina E, Maryńska-Nadachowska A, Burkhardt D, Kuznetsova V (2014) Variation in sperm formation pattern in jumping plant-lice (Hemiptera: Psylloidea): a light microscopic study. *Folia Biologica (Kraków)* 62 (2): 135-142. <https://doi.org/10.3409/fb62>
- Lauterer P (1965) A contribution to the knowledge of the psyllid fauna of Czechoslovakia II. *Acta Musei Moraviae, Scientiae naturales* 50: 171-190.
- Lauterer P (1976) Psyllids of wetland nature reserves of the German Democratic Republic, with notes on their biology, taxonomy and zoogeography (Homoptera, Psylloidea). *Faunistische Abhandlungen Staatliches Museum für Tierkunde in Dresden* 6: 111-122.
- Lauterer P (1979) New and interesting records of psyllids from Czechoslovakia (Homoptera, Psylloidea). *Acta Musei Moraviae, Scientiae naturales* 14 (143): 93-102.
- Lauterer P (1982) New data on the occurrence, bionomics and taxonomy of some Czechoslovakian Psylloidea (Homoptera). *Acta Musei Moraviae, Scientiae naturales* 17: 133-162.
- Lauterer P, Prophetou DA, Tzanakakis ME (1986) Occurrence of *Euphyllura phillyreae* Foerster (Homoptera: Aphalaridae) on olives of the Greek mainland. *Annals of the Entomological Society of America* 79 (1): 7-10. <https://doi.org/10.1093/aesa/79.1.7>
- Lauterer P, Janíček R (1990) *Trioza neglecta* Loginova, a new species for the fauna of Hungary and Bulgaria (Homoptera, Psylloidea). *Folia Entomologica Hungarica* 51: 163-165.
- Lauterer P (1991) Psyllids (Homoptera, Psylloidea) of the limestone cliff zone of the Pavlovské vrchy hills (Czechoslovakia). *Acta Musei Moraviae, Scientiae Naturales* 76: 241-263.
- Lauterer P (1993) Notes on the bionomics and occurrence of some psyllids (Homoptera, Psylloidea) in Czechoslovakia and the Balkan Peninsula. *Acta Musei Moraviae, Scientiae Biologicae* 77: 147-156.
- Lauterer P, Burckhardt D (1997) Central and West European willow-feeding jumping plant-lice of the genus *Cacopsylla* (Hemiptera: Psylloidea). *Entomological Problems* 28 (2): 81-94.
- Lauterer P, Malenovský I (2002) New distributional and biological data on European Psylloidea (Hemiptera, Sternorrhyncha), with special reference to the fauna of the Czech Republic and Slovakia. *Entomologica Basiliensia* 24: 161-177.
- Li F (2011) Psyllidomorpha of China (Insecta, Hemiptera). Science Press, Beijing, 1976 pp. [In Chinese].
- Loginova MM (1954) Listobloshki roda *Psyllopsis* Löw (Homoptera, Psyllidae) i osobennosti ikh biologii v usloviyakh Stalingradskoy oblasti. *Trudy zoologicheskogo instituta* 15: 35-52. [In Russian].
- Loginova MM (1960) New and little known leaf-hoppers (Homoptera, Psyllidae) of Middle Asia and Kazakhstan. *Trudy vsesoyuznogo entomologicheskogo obshchestva, Akademiya Nauk SSSR* 47: 53-93. [In Russian].
- Loginova MM (1961) A revision of the species of the genera *Aphalara* Frst. and *Craspedolepta* Enderl. (Homoptera, Psylloidea) in the Fauna of the USSR. I. *Entomologicheskoe Obozrenie* 40: 602-623. [In Russian].
- Loginova MM (1962) New psyllids (Homoptera, Psylloidea) from the USSR. *Trudy Zoologicheskogo Instituta* 30: 185-220. [In Russian].

- Loginova MM (1963a) A revision of the species of the genera *Aphalara* Frst. and *Craspedolepta* Enderl. (Homoptera, Psylloidea) in the Fauna of the USSR. I. Entomologicheskoe Obozrenie 42 (3): 621-648. [In Russian].
- Loginova MM (1963b) Psyllids of the genus *Psyllopsis* Löw. Acta Entomologica Musei Nationalis Pragae 35: 185-196.
- Loginova MM (1964) Podotryad Psyllinea. In: Bei-Bienko GY (Ed.) Opredelitel nasekomykh evropeiskoi tchasti SSSR. 1. Nauka, Moscow, 437-482 pp. [In Russian].
- Loginova MM (1966) New and little-known psyllids (Homoptera, Psylloidea) from the USSR. Trudy Zoologicheskogo Instituta 37: 3-35. [In Russian].
- Loginova MM (1967) Review on Palaearctic psyllids of the genus *Psylla* Geoffr. (Homoptera, Psylloidea), associated with willows. Annales Zoologici 24: 427-461.
- Loginova MM (1968) New data on the fauna and biology of the Caucasian Psylloidea. Trudy vsesoyuznogo entomologicheskogo obshchestva, Akademiya Nauk SSSR (52)275-328. [In Russian].
- Loginova MM (1971) On the taxonomy of Palaearctic Psylloidea (Homoptera). Entomologicheskoe Obozrenie 50 (3): 628-631. [In Russian].
- Loginova MM (1972) The psyllids (Psylloidea, Homoptera) of the Mongolian People's Republic. Nasekomye Mongolii 1 (1): 261-324. [In Russian].
- Loginova MM (1973) Taxonomy of the tribe Euphyllurini (Psylloidea, Homoptera). Zoologicheskii Zhurnal 52 (6): 858-869. [In Russian].
- Loginova MM (1974a) Systematics of the family Liviidae (Homoptera, Psylloidea). Zoologicheskii Zhurnal 53 (6): 858-865. [In Russian].
- Loginova MM (1974b) Jumping plant lice of the tribe Stigmaphalarini Vondr. (Psylloidea, Aphalaridae) from arid regions of Palaearctic. Entomologicheskoe Obozrenie 53: 150-170. [In Russian].
- Loginova MM (1975) A revision of the genus *Camarotoscena* Haupt (Psylloidea, Aphalaridae). Entomologicheskoe Obozrenie 54: 28-41. [In Russian].
- Loginova MM (1976) A classification of the subfamily Arytaininae Crawf. (Homoptera, Psyllidae). I. A review of the genera of the tribe Arytainini. Entomologicheskoe Obozrenie 55: 61-68. [In Russian].
- Loginova MM (1977) A review on the genus *Eryngiofaga* Klimasz. (Triozidae, Homoptera). Zoologicheskii Zhurnal 56: 510-521. [In Russian].
- Loginova MM (1978) Novije vidy psillid (Homoptera, Psylloidea). Trudy Zoologicheskogo Instituta 61: 30-123. [In Russian].
- Löw F (1888) Uebersicht der Psylliden von Oesterreich-Ungarn mit Einschluss von Bosnien und der Herzegowina, nebst Beschreibung neuer Arten. Verhandlungen der Zoologischbotanischen Gesellschaft in Wien 38: 5-40. [In German].
- Malenovský I, Jerinić-Prodanović D (2011) A revised description of *Psyllopsis repens* Loginova, 1963 (Hemiptera: Psylloidea: Psyllidae), with first records from Europe. Archives of Biological Sciences 63: 275-286. <https://doi.org/10.2298/ABS1101275M>
- Malenovský I, Baňář P, Kment P (2011) A contribution to the faunistics of the Hemiptera (Cicadomorpha, Fulgoromorpha, Heteroptera, and Psylloidea) associated with dry grassland sites in southern Moravia (Czech Republic). Acta Musei Moraviae, Scientiae biologicae 96 (1): 41-187.
- Malenovský I, Kment P, Sychra J (2014) True Bugs, leafhoppers, planthoppers and psyllids (Hemiptera: Heteroptera, Auchenorrhyncha, Psylloidea) of the environs of Přebuz in the Krušné hory Mountains (Czech Republic). Klapalekiana 50: 181-234.

- Malenovský I, Záruba M, Kment P (2016) Catalogue of type specimens of Sternorrhyncha (Hemiptera) deposited in the National Museum, Prague, Czech Republic. *Acta Entomologica Musei Nationalis Pragae* 56 (1): 423-446.
- Maryńska-Nadachowska A, Kuznetsova VG, Warchalowska-Śliwa E (1992) Karyotypes of Psyllina (Homoptera). I. New data and check-list. *Folia biologica* (Kraków) 40: 15-25.
- Maryńska-Nadachowska A (2002) A review of karyotype variation in jumping plant-lice (Psylloidea, Sternorrhyncha, Hemiptera) and checklist of chromosome numbers. *Folia biologica* (Kraków) 50: 135-152.
- Mauck K, Gebiola M, Percy D (2024) The hidden secrets of Psylloidea: Biology, behavior, symbionts, and ecology. *Annual Review of Entomology* 69 (1): 277-302. <https://doi.org/10.1146/annurev-ento-120120-114738>
- Mifsud D, Cocquempot C, Mühlethaler R, Wilson M, Streito J (2010) Other Hemiptera Sternorrhyncha (Aleyrodidae, Phylloxeroidea, and Psylloidea) and Hemiptera Auchenorrhyncha. Chapter 9.4. *BioRisk* 4: 511-552. <https://doi.org/10.3897/biorisk.4.63>
- Moreno A, Miranda M, Fereres A (2021) Psyllids as major vectors of plant pathogens. *Entomologia Generalis* 41 (5): 419-438. <https://doi.org/10.1127/entomologia/2021/1289>
- Nakabachi A, Malenovský I, Gjonov I, Hirose Y (2020) 16S rRNA sequencing detected *Profftella*, *Liberibacter*, *Wolbachia*, and *Diplorickettsia* from relatives of the Asian citrus psyllid. *Microbial Ecology* 80: 410-422. <https://doi.org/10.1007/s00248-020-01491-z>
- Nokkala C, Kuznetsova V, Shapoval N, Nokkala S (2022) Phylogeography and *Wolbachia* infections reveal postglacial recolonization routes of the parthenogenetic plant louse *Cacopsylla myrtili* (W. Wagner 1947), (Hemiptera, Psylloidea). *Journal of Zoological Systematics and Evolutionary Research* 2022 (5458633): 12 pp.. <https://doi.org/10.1155/2022/5458633>
- Nokkala S, Grozeva S, Kuznetsova V, Maryńska-Nadachowska A, Maryńska-Nadachowska A (2003) The origin of the achiasmatic XY sex chromosome system in *Cacopsylla peregrina* (Frst.) (Psylloidea, Homoptera). *Genetica* 119 (3): 327-332. <https://doi.org/10.1023/B:GENE.0000003757.27521.4d>
- Ossiannilsson F (1972) On *Trioza viridula* (Zett.) and two related species breeding on *Cirsium* (Hem., Psylloidea). *Entomologica Scandinavica* 3: 59-68. <https://doi.org/10.1163/187631272X00094>
- Ossiannilsson F (1992) The Psylloidea (Homoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 26: 347 pp.
- Oswald T (2022) Erstfund von *Spanioneura fonscolombii* und weitere bemerkenswerte Blattfloh-Nachweise aus Österreich (Hemiptera: Psylloidea). *Cicadina* 21: 55-59. <https://doi.org/10.25673/101024>
- Ouvrard D, Burckhardt D (2012) First record of the onion psyllid *Bactericera tremblayi* (Wagner, 1961) in France (Insecta: Hemiptera: Sternorrhyncha: Psylloidea), new symptoms on leek crops and reassessment of the *B. nigricornis* group distribution. *EPPO Bulletin* 42 (3): 585-590. <https://doi.org/10.1111/epp.12005>
- Ouvrard D (2020) Psyllist. Version 8. <https://flow.hemiptera-databases.org/psyllist/?db=psylles&page=home&lang=en>. Accessed on: 2025-1-15.
- Percy DM, Cronk Q (2020) *Salix* transect of Europe: patterns in the distribution of willow-feeding psyllids (Hemiptera: Psylloidea) from Greece to Arctic Norway. *Biodiversity Data Journal* 8: 1-20. <https://doi.org/10.3897/BDJ.8.E53788>

- Petrova A, Vladimirov V, Georgiev V (2013) Invasive and alien species of vascular plants in Bulgaria. Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Sofia. [ISBN 978-954-9746-30-3]
- Pintar M (2023) Fauna i rasprostranjenost lisnih buha (Insecta: Hemiptera: Psylloidea) u Hrvatskoj. [Fauna and distribution of jumping plant-lice (Insecta: Hemiptera: Psylloidea) in Croatia]. University of Zagreb, Faculty of Agriculture, Zagreb, 222 pp. [In Croatian]. URL: <https://urn.nsk.hr/urn:nbn:hr:204:440914>
- POWO (2024) Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. <https://powo.science.kew.org/>. Accessed on: 2024-11-01.
- Pramatarova M, Malenovský I, Gjonov I (2021) Notes on jumping plant-lice (Hemiptera, Psylloidea) from the Sarnena Gora Mountains. In Georgiev, D., Bechev, D. & Yancheva, V. (Eds.) Fauna of Sarnena Sredna Gora Mts, Part 2. ZooNotes 10: 28-37. <https://doi.org/10.5281/zenodo.5806004>
- Pramatarova M, Malenovský I, Gjonov I (2023) Psyllids (Hemiptera: Psylloidea) in the entomological collection of the National Museum of Natural History, Bulgarian Academy of Sciences. Historia Naturalis Bulgarica 45 (10): 261-269. <https://doi.org/10.48027/hnb.45.102>
- Pramatarova M, Burckhardt D, Malenovský I, Gjonov I, Schuler H, Serbina LŠ (2024) Unravelling the molecular identity of Bulgarian jumping plant lice of the family Aphalaridae (Hemiptera: Psylloidea). Insects 15 (683): 1-22. <https://doi.org/10.3390/insects15090683>
- Pramatarova M, Malenovský I, Gjonov I (2025) Jumping plant lice (Hemiptera, Psylloidea) of Bulgaria – an annotated checklist. Occurrence dataset. 1.1. Sofia University Zoological Collection (BFUS). Release date: 2025-1-12. URL: <https://doi.org/10.15468/9bjab9>
- Prunar F, Drăghici A, Mancu C (2023) *Spanioneura fonscolombii* (Hemiptera: Psylloidea) a new jumping plant-lice for Romania fauna. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 66 (2): 301-306. <https://doi.org/10.3897/travaux.66.e98619>
- Rapisarda C (1989) On the presence in Sicily of the green fig psyllid (*Homotoma viridis* Klimaszewski) and description of its fifth instar nymph (Homoptera Psylloidea). Bollettino Della Società Entomologica Italiana, Genova 121 (1): 13-18. [In Italian].
- Rapisarda C (1998) New data on the Sicilian psyllids. Atti dell'Accademia roveretana degli Agiati VIII (B): 97-104.
- Rodrigo-Gómez S, Burckhardt D (2023) Confirmation of the presence of the pistachio psyllid *Agonoscena pistaciae* Burckhardt & Lauterer, 1989 in Spain. EPPO Bulletin 53 (1): 132-138. <https://doi.org/10.1111/epp.12918>
- Sauvion N, Peccoud J, Meynard C, Ouvrard D (2021) Occurrence data for the two cryptic species of *Cacopsylla pruni* (Hemiptera: Psylloidea). Biodiversity Data Journal 9: e68860. <https://doi.org/10.3897/bdj.9.e68860>
- Schaefer HA (1949) Beiträge zur Kenntnis der Psylliden der Schweiz. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 22 (1): 97 pp. [In German].
- Scott J (1880) Descriptions of four new species of Russian Psyllidae. Entomologist's Monthly Magazine 16: 250-252.
- Seljak G, Malenovský I, Lauterer P (2008) New records of jumping plant-lice from Slovenia with description of *Bactericera lyrata* sp. n. (Hemiptera: Psylloidea). Revue suisse de zoologie 115: 527-540. <https://doi.org/10.5962/bhl.part.80442>

- Seljak G, Malenovský I (2014) Preimaginal stages and biology of *Bactericera lyrata* (Hemiptera: Psylloidea: Triozidae). *Acta Entomologica Musei Nationalis Pragae* 54: 35-46. <https://doi.org/10.5281/zenodo.4468219>
- Seljak G (2020) Jumping Plant-lice of Slovenia (Insecta: Hemiptera: Psylloidea). *Scopolia* 98: 1-224.
- Serbina L, Burckhardt D, Borodin L (2020) The jumping plant-lice (Hemiptera: Psylloidea) of Belarus. *Revue suisse de Zoologie* 122 (1): 7-44. <https://doi.org/10.5281/zenodo.14578>
- Shapoval N, Nokkala S, Nokkala C, Kuffina G, Kuznetsova V (2021) The incidence of *Wolbachia* bacterial endosymbiont in bisexual and parthenogenetic populations of the psyllid genus *Cacopsylla* (Hemiptera, Psylloidea). *Insects* 12 (10): 1-19. <https://doi.org/10.3390/insects12100853>
- Specify Collections Consortium (2021) SPECIFY 7 v. 7.6. [Retrieved from: <https://github.com/specify/specify7>].
- Spodek M, Burckhardt D, Freidberg A (2017) The Psylloidea (Hemiptera) of Israel. *Zootaxa* 4276 (3): 301-345.
- Šulc K (1907) Příspěvky ku poznání Psyll. (I. *Psylla Spartii* Guérin-Loew a *Psylla spartiicola* n. sp. 2: 1–8. *Rozpravy České akademie císaře Františka Josefa pro vědy, slovesnost a umění. Třída II, Mathematiko-přírodnická* 2: 1-8. [In Czech]. <https://doi.org/10.1053/euhj.2000.2449>
- Tamanini L (1965) Osservazioni sulla distribuzione e sui caratteri specifici delle psille del fico (Homoptera, Psylloidea). *Atti della Accademia Roveretana degli Agiati, Scienze Fisiche, Matematiche e Naturali* V: 105-110. [In Italian].
- Tamanini L (1977) Descrizione di una nuova psilla delle tamerici dell'Italia meridionale (Homoptera, Psyllodea). *Bollettino del Museo Civico di Storia Naturale, Verona* 4: 219-225. [In Italian].
- Tsalev M (1961) Nov neproyatel po smokinyata u nas. *Ovoshtarstvo* 10: 37-38. [In Bulgarian].
- Valle D, Burckhardt D, Mujica V, Zoppolo R, Morelli E (2017) The occurrence of the pear psyllid, *Cacopsylla bidens* (Šulc, 1907) (Insecta: Hemiptera: Psyllidae), in Uruguay. *Check List* 13 (2). <https://doi.org/10.15560/13.2.2088>
- Véték G, Rédei D (2009) First record of *Acizzia jamatonica* (Kuwayama) (Hemiptera: Psyllidae) in Bulgaria. *Acta Zoologica Bulgarica* 61 (3): 323-325.
- Vladimirov V, Petrova A (2023) Alien species of vascular plants first reported for Bulgaria after 2000. *Phytologia Balcanica* 29 (3): 461-474.
- Vondráček K (1953) Results of zoological scientific expedition of the National Museum in Praha to Turkey. 14 Hemiptera III. Homoptera - Psyllinea. *Acta Entomologica Musei Nationalis Pragae* 28: 435-450.
- Vondráček K (1957a) Mery-Psylloidea (Fauna ČSR, Svazek 9). *Československá akademie věd, Praha* 431 pp. [In Czech].
- Vondráček K (1957b) New jumping plant-lice (Psylloidea-Homoptera) from Slovakia. *Folia Zoologica* 6: 169-176. [In Czech].
- White IM, Hodkinson ID (1982) Psylloidea (Nymphal stages) Hemiptera, Homoptera. *Handbooks for the Identification of British Insects. II. Royal Entomological Society of London, London*, 50 pp.
- Wonglersak R, Cronk QB, Percy DM (2017) *Salix* transect of Europe: structured genetic variation and isolation-by-distance in the nettle psyllid, *Trioza urticae* (Psylloidea,

Hemiptera), from Greece to Arctic Norway. Biodiversity Data Journal 5 (e10824): 1-12.
<https://doi.org/10.3897/bdj.5.e10824>

Supplementary material

Suppl. material 1: Comparison of psyllid diversity in Bulgaria and other Balkan countries and Turkey [doi](#)

Authors: Pramatarova M., Malenovský I., Gjonov I.

Data type: review

[Download file](#) (897.95 kb)